Day : Wednesday

PALM INTRANET

Date: 9/24/2003
Time: 16:38:58

Inventor Name Search Result

Your Search was:

Last Name = BREIVIK
First Name = JARLE

Application#	Patent#	Status	Date Filed	Title	Inventor Name
09831537	Not Issued	095	07/05/2001	SYSTEM WHICH CAN REVERSIBLY REPRODUCE ITSELF	BREIVIK, JARLE
09831536	Not Issued	030	07/03/2001	SIMULATION OF CHEMICAL INTERACTIONS	BREIVIK, JARLE
08836329	6090546	150	08/22/1997	METHOD FOR THE DETECTION OF RAS ONCOGENES, IN PARTICULAR THE K-RAS ONCOGENE	BREIVIK , JARLE
08640891	6090935	150	10/28/1996	ISOLATION OF NUCLEIC ACID	BREIVIK , JARLE

Inventor Search Completed: No Records to Display.

Search Another: Inventor **Last Name** breivik **First Name** jarle Search

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h e eb cg b e f e b e

L Number	Hits	Search Text	DB	Time stamp
-	1317104	magnet$	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:11
-	663387	separation	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:11
-	0		USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:12
-	2244083	temperature	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:11
-	0		USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:11
-	88380	magnet$ and separation	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:12
-	47585	temperature and (magnet$ and separation)	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:12
-	15073	curie	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:12
-	949	(temperature and (magnet$ and separation)) and curie	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:13
-	2330641	biolog$ or chemical or biochemical	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:13
-	501	((temperature and (magnet$ and separation)) and curie) and (biolog$ or chemical or biochemical)	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:13
-	29881	respon$ near temperature	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:14
-	14	(((temperature and (magnet$ and separation)) and curie) and (biolog$ or chemical or biochemical)) and (respon$ near temperature)	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/09/24 13:14

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NEWS	14	AUG 18	Data available for download as a PDF in RDISCLOSURE
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=> s ?magnet?
LEFT TRUNCATION IGNORED FOR '?MAGNET?' FOR FILE 'BIOTECHDS'
L1     1655987 ?MAGNET?
Left truncation is not valid in the specified search field in the
specified file.  The term has been searched without left truncation.
Examples: '?TERPEN?' would be searched as 'TERPEN?' and '?FLAVONOID'
would be searched as 'FLAVONOID.'

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used a truncation symbol after a punctuation mark, the system may
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=> s bind? or connect? or join? or link?
L2     5267993 BIND? OR CONNECT? OR JOIN? OR LINK?

=> s l1 and l2
L3      142821 L1 AND L2

=> s curie
L4       43992 CURIE

=> s l3 and l4
L5        1117 L3 AND L4

=> s biolog? or chemi? or biochemi?
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=>  s biolog? or chemi? or biochemi?
SYSTEM LIMITS EXCEEDED - SEARCH ENDED
L6   HAS NO ANSWERS
   2 FILES SEARCHED...
SYSTEM LIMITS EXCEEDED - SEARCH ENDED
L6   HAS NO ANSWERS
COMMAND INTERRUPTED
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Enter "HELP STN" for information on contacting the nearest STN Help
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Desk by telephone or via SEND in the STNMAIL file.

=> s biolog? or chemi?
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FILE 'MEDLINE, BIOSIS, BIOTECHDS, CAPLUS, EMBASE' ENTERED AT 09:25:23 ON 25 SEP 2003
L1 1655987 S ?MAGNET?
L2 5267993 S BIND? OR CONNECT? OR JOIN? OR LINK?
L3 142821 S L1 AND L2
L4 43992 S CURIE
L5 1117 S L3 AND L4

=> s temperature (s) environment?
L6 52322 TEMPERATURE (S) ENVIRONMENT?

=> s l5 and l6
L7 3 L5 AND L6

=> d ti l7 1-3

L7 ANSWER 1 OF 3 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI PYROLYSIS AND SOFT IONIZATION MASS SPECTROMETRY OF AQUATIC-TERRESTRIAL HUMIC SUBSTANCES AND SOILS.

L7 ANSWER 2 OF 3 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
TI (2)H MAS NMR studies of the manganese dioxide tunnel structures and hydroxides used as cathode materials in primary batteries.

L7 ANSWER 3 OF 3 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
TI Proton NMR investigation of the [4Fe-4S]1+ cluster environment of nitrogenase iron protein from Azotobacter vinelandii: Defining nucleotide-induced conformational changes.

=> d ibib abs l7 1-3

L7 ANSWER 1 OF 3 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1987:447901 BIOSIS
DOCUMENT NUMBER: BA84:103739
TITLE: PYROLYSIS AND SOFT IONIZATION MASS SPECTROMETRY OF AQUATIC-TERRESTRIAL HUMIC SUBSTANCES AND SOILS.
AUTHOR(S): SCHULTEN H-R
CORPORATE SOURCE: FACHHOCHSCHULE FRESENIUS, DEP. TRACE ANALYSIS, DAMBACHTAL 20, 6200 WIESBADEN, W. GER.
SOURCE: J ANAL APPL PYROLYSIS, (1987) 12 (2), 149-186.
CODEN: JAAPDD. ISSN: 0165-2370.
FILE SEGMENT: BA; OLD
LANGUAGE: English
AB The rapid, reproducible, chemical characterization of complex **environmental** materials such as plants, humic substances and whole soil can be performed by controlled thermal degradation. Except for drying and milling no pre-treatment of the samples is required. Biomacromolecular cleavage during a short degradation step directly in the ion source of a mass spectrometer results in the production of high-mass chemical subunits. Short reaction times and small amounts of sample favour the generation of large, thermal fragments, i.e., chemical building blocks, which can be identified and correlated with the structure of the polymeric biomaterials investigated. The principal aim is to monitor the primary, thermal fragmentation by high molecular ion intensities of the pyrolyzates and to avoid consecutive, mass spectrometric fragmentation as far as possible. For the detection and identification of the pyrolysis (Py) products, a combination with time-/**temperature**-controlled mass spectrometry (MS) is used. Typical heating rates are 0.2-10.degree.C/s and the **temperature** range is 50-800.degree.C. Soft ionization techniques such as field ionization (FI), field desorption, chemical ionization (CI) and, to some extent, fast atom bombardment are employed in the positive and negative modes. The results of direct Py-MS are supported by high-resolution mass measurements using electric or photographic detection and **Curie**-point pyrolysis in combination with gas chromatography-electron ionization/FI/CIMS and library searches for the identification of the pyrolysis products. Fingerprinting and time-resolved Py-MS of aquatic and terrestrial humic substances are reported. The methodology for the investigations of dynamic processes during the volatilization and thermal decomposition of these complex biomaterials is illustrated. Weight loss curves and the **temperature** function of accurate molecular weight averages for aquatic fulvic and humic acid are derived from the Py-FIMS data. Initial results on the differentiation of

soil horizons in a moder profile by Py-FIMS and pattern recognition are presented. In particular, the chemometric evaluation appears promising for future Py-MS studies of humic substances and whole soils, but also for fossil fuels, synthetic polymers and food. In an integrated approach, the **linking** of conventional chemical and spectroscopic data with the high-mass signals in pyrolysis-mass spectra will be the focus of forthcoming work. Preliminary results for combining wet-chemical data with those of 13C nuclear **magnetic** resonance, Fourier transform infrared and electron spin resonance spectroscopy are put forward in the survey. Finally, initial results of pilot studies to detect biocides such as atrazine directly in soils using Py-FIMS are demonstrated.

L7 ANSWER 2 OF 3 EMBASE
on STN

ACCESSION NUMBER: 2001339381 EMBASE
TITLE: (2)H MAS NMR studies of the manganese dioxide tunnel structures and hydroxides used as cathode materials in primary batteries.
AUTHOR: Paik Y.; Osegovic J.P.; Wang F.; Bowden W.; Grey C.P.
CORPORATE SOURCE: C.P. Grey, Department of Chemistry, State University of New York, Stony Brook, NY 11794-3400, United States
SOURCE: Journal of the American Chemical Society, (26 Sep 2001) 123/38 (9367-9377).
Refs: 54
ISSN: 0002-7863 CODEN: JACSAT
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 027 Biophysics, Bioengineering and Medical Instrumentation
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Variable-**temperature** (2)H MAS NMR spectroscopy was used to investigate the local **environments** and mobility of deuterons in the manganese dioxide tunnel structures. Five systems were investigated: electrolytic manganese dioxide (EMD), the model compounds groutite and manganite, and deuterium intercalated ramsdellite and pyrolusite. Ruetschi deuterons, located in the cation vacancy sites in EMD, were detected by NMR and give rise to a resonance at 150 ppm at room **temperature**. These deuterons are rigid on the (2)H MAS NMR time scale (i.e., the correlation time for motion, .tau.(c), is > 10(-3) s) at room **temperature**, but start to become mobile above 150 .degree.C. No Coleman protons (in the so-called 1 x 1 and 1 x 2 tunnels in EMD) were observed, Much larger (2)H NMR hyperfine shifts of .apprx.300 and .apprx.415 ppm were observed for the deuterons in the tunnel structures of manganite and groutite, which could be explained by considering the different, bonding arrangements for deuterons in the 1 x 1 and 1 x 2 tunnels. The smaller shift of the EMD deuterons was primarily ascribed to the smaller number of manganese ions in the deuterium local coordination sphere. Experiments performed as a function of intercalation level for ramsdellite suggest that the 1 x 1 tunnels are more readily intercalated in highly defective structures. The almost identical shifts seen as a function of intercalation level for deuterons in both 1 x 1 and 1 x 2 tunnels are consistent with the localization of the e(g) electrons near the intercalated deuterium atoms. A **Curie** - Weiss-like **temperature** dependence for the hyperfine shifts of EMD and groutite was observed with **temperature**, but very little change in the shift of the manganite deuterons was observed, consistent with the strong **antiferromagnetic** correlations that exist above the Neel **temperature** for this compound. These different **temperature** dependences could be used to identify manganite-like domains within the sample of groutite, which could not be detected by X-ray diffraction.

L7 ANSWER 3 OF 3 EMBASE

on STN
ACCESSION NUMBER: 95367403 EMBASE
DOCUMENT NUMBER: 1995367403
TITLE: Proton NMR investigation of the [4Fe-4S]1+ cluster environment of nitrogenase iron protein from Azotobacter vinelandii: Defining nucleotide- induced conformational changes.
AUTHOR: Lanzilotta W.N.; Holz R.C.; Seefeldt L.C.
CORPORATE SOURCE: Department of Chemistry/Biochemistry, Utah State University,Logan, UT, United States
SOURCE: Biochemistry, (1995) 34/48 (15646-15653).
ISSN: 0006-2960 CODEN: BICHAW
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English

AB This work presents the complete assignment of the isotropically shifted 1H NMR resonances of Azotobacter vinelandii nitrogenase iron protein (Fe protein) to .beta.-CH2 and .alpha.-CH protons of the [4Fe-4S]1+' cluster cysteinyl ligands. Four resonances were observed for the reduced Fe protein with chemical shifts of 49, 23, 17, and 13 ppm. T1 measurements and analysis of relative peak areas coupled with one-dimensional nuclear Overhauser effect (NOE) difference spectra were used to assign the two most downfield-shifted resonances (49 and 23 ppm) to cysteinyl ligand .beta.-CH2 protons and the 17 and 14 ppm resonances to cysteinyl ligand .alpha.-CH protons. **Temperature** dependence studies of the isotropically shifted protons revealed both **Curie** and anti-**Curie** behavior. These results, along with previous Mossbauer studies of the Fe protein, allowed the assignment of signal A (49 ppm) to four .beta.-CH2 protons and signal C (17 ppm) to 2 .alpha.-CH protons of two cysteinyl ligands bound to a mixed-valence iron pair (Fe3+-Fe2+) of the [4Fe-4S]1+ cluster. Signal B (23 ppm) was assigned to four .beta.-CH2 protons, and signal C (17 ppm) and D (13 ppm) were assigned to two .alpha.-CH protons of two cysteinyl ligands bound to a ferrous pair of irons (2Fe2+). The effects of MgATP, MgADP, and Mg-adenosine-.beta.,.gamma.-methylene-5'-triphosphate **binding** to the Fe protein on the assigned resonances were established and are discussed in the context of nucleotide-induced changes in the protein **environment** of the [4Fe- 4S] cluster. In addition, conditions are described that prevent the long- standing problem of A. vinelandii Fe protein self-oxidation.

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     FILE 'MEDLINE, BIOSIS, BIOTECHDS, CAPLUS, EMBASE' ENTERED AT 09:25:23 ON
     25 SEP 2003
L1      1655987 S ?MAGNET?
L2      5267993 S BIND? OR CONNECT? OR JOIN? OR LINK?
L3       142821 S L1 AND L2
L4        43992 S CURIE
L5         1117 S L3 AND L4
L6        52322 S TEMPERATURE (S) ENVIRONMENT?
L7            3 S L5 AND L6

=> s curie (s)  point
L8        19897 CURIE (S) POINT

=> s l3 and l8
L9          391 L3 AND L8
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=> s temperature (s) (correspond? or response)
L10       72287 TEMPERATURE (S) (CORRESPOND? OR RESPONSE)

=> s l9 and l10
L11           0 L9 AND L10

=> s temperature (s) (chang? or varian?)
L12      122140 TEMPERATURE (S) (CHANG? OR VARIAN?)

=> s l9 and l12
L13           1 L9 AND L12

=> d ibib abs l13

L13  ANSWER 1 OF 1  EMBASE  COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED.
     on STN
ACCESSION NUMBER:    1999126962  EMBASE
TITLE:               Tunable molecular distortion in a nickel complex coupled to
                     a reversible phase transition in the crystalline state.
AUTHOR:              Falvello L.R.; Hitchman M.A.; Palacio F.; Pascual I.;
                     Schultz A.J.; Stratemeier H.; Tomas M.; Urriolabeitia E.P.;
                     Young D.M.
CORPORATE SOURCE:    L.R. Falvello, Department of Inorganic Chemistry, Condensed
                     Matter Physics, University of Zaragoza-C.S.I.C., Plaza San
                     Francisco s/n, E-50009 Zaragoza, Spain
SOURCE:              Journal of the American Chemical Society, (31 Mar 1999)
                     121/12 (2808-2819).
                     ISSN: 0002-7863  CODEN: JACSAT
COUNTRY:             United States
DOCUMENT TYPE:       Journal; Article
FILE SEGMENT:        029      Clinical Biochemistry
LANGUAGE:            English
SUMMARY LANGUAGE:    English
AB   The six-coordinate coordination complex trans-[Ni(cyan-xN)2(NH3)4] has
     been characterized in the solid state by X-ray and neutron diffraction at
     temperatures ranging from 11 to 298 K, by electronic spectroscopy over the
     temperature range 14-297 K, and by magnetic
     susceptibility measurements from 1.8 to 300 K. At room temperature
     the observed space group is Fmmm, although there is reason to believe that
     at a finer level of distinction it is really Cmcm approximating Fmmm. The
     nickel center lies on a site of apparent point symmetry mmm. At
     lower temperatures, the space group is unambiguously Cmcm without
     appreciable change in the unit cell parameters, and the molecule
     lies at a site of m2m symmetry. The shape of the molecule changes
     smoothly with temperature variations from room
     temperature down to about 140 K, in a behavior characteristic of
     second-order phase transformations. The molecular shape varies, but by
     lesser amounts, below 140 K. Possible causes of this phenomenon are
     discussed. The increase in intensity on cooling of some of the bands
     observed in the polarized crystal spectrum of the complex is consistent
     with the change in the molecular structure. Bonding parameters
     derived from the transition energies indicate that the cyanurate produces
     a very weak ligand field, which is consistent with the long metal-ligand
     bond to this ligand. The magnetic properties of the solid
     display Curie-Weiss behavior through the temperature
     range of the most pronounced molecular shape changes, but
     antiferromagnetic interactions become significant below 50 K, with
     antiferromagnetic ordering at 2.61 K. The propagation pathways for
     the magnetic interactions are inferred.


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     FILE 'MEDLINE, BIOSIS, BIOTECHDS, CAPLUS, EMBASE' ENTERED AT 09:25:23 ON
     25 SEP 2003
L1       1655987 S ?MAGNET?
L2       5267993 S BIND? OR CONNECT? OR JOIN? OR LINK?
L3        142821 S L1 AND L2
L4         43992 S CURIE
L5          1117 S L3 AND L4
L6         52322 S TEMPERATURE (S) ENVIRONMENT?
L7             3 S L5 AND L6
L8         19897 S CURIE (S)  POINT
L9           391 S L3 AND L8
L10        72287 S TEMPERATURE (S) (CORRESPOND? OR RESPONSE)
L11            0 S L9 AND L10
L12       122140 S TEMPERATURE (S) (CHANG? OR VARIAN?)
L13            1 S L9 AND L12

=> s curie point
L14       19644 CURIE POINT

=> s l3 and  l14
L15         379 L3 AND L14

=> s simulat? or demonstrat?
L16     4076235 SIMULAT? OR DEMONSTRAT?

=> s l15 and l16
L17           8 L15 AND L16

=> dup rem l17
PROCESSING COMPLETED FOR L17
L18           8 DUP REM L17 (0 DUPLICATES REMOVED)

=> d ibib abs l18 1-8

L18  ANSWER 1 OF 8  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:         2001:827413  CAPLUS
DOCUMENT NUMBER:          136:111418
TITLE:                    Free spin-fluctuating lattice polarons as an
                          alternative to small polarons
AUTHOR(S):                Nagaev, E. L.; Farzetdinova, R. M.
CORPORATE SOURCE:         Institute of Radioengineering and Electrotechnics,
                          RAS, Moscow, 101999, Russia
SOURCE:                   Physics Letters A (2001), 290(3-4), 187-192
                          CODEN: PYLAAG; ISSN: 0375-9601
PUBLISHER:                Elsevier Science B.V.
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB   High-binding-energy small polarons contradict stability
     condition for the lattice.  In magnetic semiconductors and
     manganites above the Curie point combined low-mobility
     magnetic-lattice polarons are possible.  The free electron (hole)
     self-trapping occurs due to fluctuations of their spins following the
     fluctuations of the local magnetic moment, and to the lattice
     polarization.
REFERENCE COUNT:          14     THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS
                                 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18  ANSWER 2 OF 8  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:         2000:185567  CAPLUS
DOCUMENT NUMBER:          132:273066
TITLE:                    Dynamical mean-field theory of a simplified
                          double-exchange model
AUTHOR(S):                Letfulov, B. M.
```

CORPORATE SOURCE: Ural Division of Russian Academy of Sciences, Institute of Metal Physics, Yekaterinburg, 620219, Russia
SOURCE: European Physical Journal B: Condensed Matter Physics (2000), 14(1), 19-28
CODEN: EPJBFY; ISSN: 1434-6028
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Simplified double-exchange model including transfer of the itinerant electrons with spin parallel to the localized spin in the same site and the indirect interaction J of kinetic type between localized spins is comprehensively studied. The model is exactly solved in infinite dimensions. The exact equations describing the main ordered phases (**ferromagnetic** and **antiferromagnetic**) are obtained for the Bethe lattice with z .fwdarw. .infin. (z is the coordination no.) in anal. form. The exact expression for the generalized **paramagnetic** susceptibility of the localized-spin subsystem is also obtained in anal. form. Temp. dependence of the uniform and the staggered susceptibilities has deviation from Curie-Weiss law. Dependence of Curie and Neel temps. on itinerant-electron concn. is discussed to study instability conditions of the **paramagnetic** phase. Anomalous temp. behavior of the chem. potential, the thermopower and the sp. heat is studied near the **Curie point**. It is found for J = 0 that the system is unstable towards temp. phase sepn. between **ferromagnetic** and **paramagnetic** states. A phase sepn. **connected** with **antiferromagnetic** and the **paramagnetic** phases can occur only at J* > J* 0.318. Zero-temp. phase diagram including the phase sepn. between **ferromagnetic** and **antiferromagnetic** states is given.

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:516764 CAPLUS
DOCUMENT NUMBER: 123:186131
TITLE: Orientational and **magnetic** ordering of buckyballs in TDAE-C60
AUTHOR(S): Mihailovic, D.; Arcon, D.; Venturini, P.; Blinc, R.; Omerzu, A.; Cevc, P.
CORPORATE SOURCE: Jozef Stefan Inst., Ljubljana, Slovenia
SOURCE: Science (Washington, D. C.) (1995), 268(5209), 400-2
CODEN: SCIEAS; ISSN: 0036-8075
PUBLISHER: American Association for the Advancement of Science
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Spin ordering in the low-temp. **magnetic** phase is directly **linked** to the orientational ordering of C60 mols. in organically doped fullerene derivs. ESR and a.c. susceptometry measurements on tetrakis(dimethylamino)ethylene-C60 (TDAE-C60) (Curie temp. Tc = 16 K) show a direct coupling between spin and merohedral degrees of freedom. This coupling was exptl. **demonstrated** by showing that ordering the spins in the **magnetic** phase imprints a merohedral order on the solid or, conversely, that merohedrally ordering the C60 mols. influences the spin order at low temp. The merohedral disorder gives rise to a distribution of .pi.-electron exchange interactions between spins on neighboring C60 mols., suggesting a microscopic origin for the obsd. spin-glass behavior of the **magnetic** state.

L18 ANSWER 4 OF 8 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1987:447901 BIOSIS
DOCUMENT NUMBER: BA84:103739
TITLE: PYROLYSIS AND SOFT IONIZATION MASS SPECTROMETRY OF AQUATIC-TERRESTRIAL HUMIC SUBSTANCES AND SOILS.

AUTHOR(S): SCHULTEN H-R
CORPORATE SOURCE: FACHHOCHSCHULE FRESENIUS, DEP. TRACE ANALYSIS, DAMBACHTAL 20, 6200 WIESBADEN, W. GER.
SOURCE: J ANAL APPL PYROLYSIS, (1987) 12 (2), 149-186.
CODEN: JAAPDD. ISSN: 0165-2370.
FILE SEGMENT: BA; OLD
LANGUAGE: English

AB The rapid, reproducible, chemical characterization of complex environmental materials such as plants, humic substances and whole soil can be performed by controlled thermal degradation. Except for drying and milling no pre-treatment of the samples is required. Biomacromolecular cleavage during a short degradation step directly in the ion source of a mass spectrometer results in the production of high-mass chemical subunits. Short reaction times and small amounts of sample favour the generation of large, thermal fragments, i.e., chemical building blocks, which can be identified and correlated with the structure of the polymeric biomaterials investigated. The principal aim is to monitor the primary, thermal fragmentation by high molecular ion intensities of the pyrolyzates and to avoid consecutive, mass spectrometric fragmentation as far as possible. For the detection and identification of the pyrolysis (Py) products, a combination with time-/temperature-controlled mass spectrometry (MS) is used. Typical heating rates are 0.2-10.degree.C/s and the temperature range is 50-800.degree.C. Soft ionization techniques such as field ionization (FI), field desorption, chemical ionization (CI) and, to some extent, fast atom bombardment are employed in the positive and negative modes. The results of direct Py-MS are supported by high-resolution mass measurements using electric or photographic detection and **Curie-point** pyrolysis in combination with gas chromatography-electron ionization/FI/CIMS and library searches for the identification of the pyrolysis products. Fingerprinting and time-resolved Py-MS of aquatic and terrestrial humic substances are reported. The methodology for the investigations of dynamic processes during the volatilization and thermal decomposition of these complex biomaterials is illustrated. Weight loss curves and the temperature function of accurate molecular weight averages for aquatic fulvic and humic acid are derived from the Py-FIMS data. Initial results on the differentiation of soil horizons in a moder profile by Py-FIMS and pattern recognition are presented. In particular, the chemometric evaluation appears promising for future Py-MS studies of humic substances and whole soils, but also for fossil fuels, synthetic polymers and food. In an integrated approach, the **linking** of conventional chemical and spectroscopic data with the high-mass signals in pyrolysis-mass spectra will be the focus of forthcoming work. Preliminary results for combining wet-chemical data with those of 13C nuclear **magnetic** resonance, Fourier transform infrared and electron spin resonance spectroscopy are put forward in the survey. Finally, initial results of pilot studies to detect biocides such as atrazine directly in soils using Py-FIMS are **demonstrated**.

L18 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1964:8058 CAPLUS
DOCUMENT NUMBER: 60:8058
ORIGINAL REFERENCE NO.: 60:1377b-c
TITLE: Contribution to the study of **paramagnetism** in iron-cobalt alloys
AUTHOR(S): Barnier, Y.; Pauthenet, R.; Neel, L.
SOURCE: Cobalt (1963), 21, 168-75
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB The **paramagnetism** of Fe-Co alloys contg. 0-100% Co was detd. in a vacuum, as a function of temp. The results are in complete agreement with the Fe-Co equil. diagram. In particular, the discontinuities previously reported by Preuss (Thesis, Zurich, 1912) in the reciprocal of susceptibility vs.-temp. curves of the alloys contg. 0-70% Co at a temp., .theta.d, some 50 to 100.degree.K. above the corresponding Curie points,

were not observed. These discontinuities must result from performing the expts. in air. Accordingly, the possible effects of O on the **magnetic** properties were studied, and it was **demonstrated** that the discontinuity observed by Preuss at .theta.d is related to the **ferromagnetic Curie point** of a Co-rich Fe-Co alloy which forms in the original material as a result of the oxidn. mechanism which is operative in Fe-Co alloys (preferential Fe oxidn., and Co diffusion toward the center of the specimen).

L18 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1966:837 CAPLUS
DOCUMENT NUMBER: 64:837
ORIGINAL REFERENCE NO.: 64:131f-h,132a
TITLE: Thermodynamic behavior of the Heisenberg **ferromagnet**
AUTHOR(S): Stinchcombe, R. B.; Horwitz, G.; Englert, F.; Brout, R.
CORPORATE SOURCE: Cornell Univ., Ithaca, NY
SOURCE: Physical Review (1963), 130(1), 155-76
CODEN: PHRVAO; ISSN: 0031-899X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A finite-temp. perturbation theory is presented for the Heisenberg model with the object of providing a formalism in which contact can be made with the low-temp. treatment by Dyson, with the random-phase approxn. of Englert, and, above the **Curie point**, with high-d. treatments of the Ising model. A **linked** cluster expansion is set up, and a simple high-d. classification, valid above the **Curie point**, is applied. The first two terms in the high-d. series, tree graphs and ring graphs, yield, resp., mol. field theory and a form reducing to spin-wave results at low temps. A low-temp. classification is then developed which leads to an expansion of the free energy in powers of T in which the terms have the form of those describing bosons with an effective interaction similar to Dyson's .GAMMA..rho..sigma..lambda.. The first two terms are the low-temp. approximations of trees and rings, resp., which justifies the use of the high-d. expansion below the **Curie point**. The next term, including all the effects of spin-wave interactions up to T4 in the free energy, contains the Born approximation series presented by Dyson. In particular, the cancellation of T3 terms in the leading Born approximation is **demonstrated**. A renormalized version of the high-d. expansion necessary to treat the region of the **Curie point** is then considered, and its approximation of an "excluded vol." sum is shown to yield the **Curie point** of the spherical model, in common with the random-phase approximation and with high-d. approximations to the Ising model. The extent to which the high-d. theory misrepresents the effect of spin-wave interactions is then discussed. An equations-of-motion approach to the random-phase approxn. and to the interactions between spin waves is presented.

L18 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1964:731 CAPLUS
DOCUMENT NUMBER: 60:731
ORIGINAL REFERENCE NO.: 60:103c-f
TITLE: Thermodynamic behavior of the Heisenberg **ferromagnet**
AUTHOR(S): Englert, F.; Brout, R.; Stinchcombs, R. B.; Horwitz, G.
SOURCE: NASA (Natl. Aeron. Space Admin.), Doc. (1962), N63-13429, 81 pp.
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB A finite temp. perturbation theory is presented for the Heisenberg model with the object of providing a formalism in which contact can be made with

the low-temp. treatment by Dyson, the random phase approxn. of Englert, and, above the **Curie point**, with high-d. treatments of the Ising model. A **linked** duster expansion is set up and a simple high-d. classification, valid above the **Curie point**, is applied. The first 2 terms in the high-d. series, tree graphs and ring graphs, yield mol. field theory and a form reducing to spin-wave results at low temps. A low-temp. classification is then developed which leads to an expansion of the free energy in powers of T in which the terms have the form of those describing bosons with an effective interaction similar to D.'s interaction. The first 2 terms are the low-temp. approxns. of trees and rings, resp., which justify the use of the high-d. expansion below the **Curie point**. The next term, including all the effects of spin-wave interaction up to T4 in the free energy, contains the Born approxn. series presented by D. In particular, the cancellation of T3 terms in the leading Born approxn. is **demonstrated**. A renormalized version of the high-d. expansion necessary to treat the region of the **Curie point** is then considered, and its approxn. by an excluded vol. sum is shown to yield the **Curie point** of the spherical model, in common with the random phase approxn. and with high-d. approxns. to the Ising model. The extent to which the high-d. theory misrepresents the effect of spin-wave interactions is then discussed. An equations-of-motion approach to the random phase approxn. and to the interactions between spin waves is presented. From NASA (Natl. Aeron. Space Admin.), Sci. Tech. Aerospace Rept. 1(8), 544(1963).

L18 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1959:118714 CAPLUS
DOCUMENT NUMBER: 53:118714
ORIGINAL REFERENCE NO.: 53:21190d-f
TITLE: The multielectron theory of semiconductors. III. **Antiferromagnetic** semiconductors
AUTHOR(S): Irkhin, Yu. P.
SOURCE: Fizika Metallov i Metallovedenie (1959), 7, 3-10
CODEN: FMMTAK; ISSN: 0015-3230
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Math. A study of the s-d exchange interaction in a very simple model of an **antiferromagnetic** semiconductor **demonstrated** the possibility of the appearance of elec. cond. anomalies in the vicinity of the N.acte.eel temp. These anomalies generally appear as breaks in ln .rho. 1/T at the N.acte.eel point; however, in semiconductors with low activation energies the effect may cause the appearance of metallic cond. below the N.acte.eel point in **connection** with the transition of the semiconductor into a degenerate state. In **antiferromagnetic** semiconductors within a wide temp. range, admixed cond. plays a dominating role. The latter is assocd. with either an increase or decrease in activation energy; in this case the magnitude and sign of the effect may be dependent on the previous treatment of the sample. The exptl. data qual. confirm the theory; however, further simultaneous studies of the elec. and **magnetic** properties of **antiferromagnetic** semiconductors are necessary.

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(FILE 'HOME' ENTERED AT 09:25:08 ON 25 SEP 2003)

FILE 'MEDLINE, BIOSIS, BIOTECHDS, CAPLUS, EMBASE' ENTERED AT 09:25:23 ON 25 SEP 2003
L1 1655987 S ?MAGNET?
L2 5267993 S BIND? OR CONNECT? OR JOIN? OR LINK?
L3 142821 S L1 AND L2
L4 43992 S CURIE

```
L5          1117 S L3 AND L4
L6         52322 S TEMPERATURE (S) ENVIRONMENT?
L7             3 S L5 AND L6
L8         19897 S CURIE (S)  POINT
L9           391 S L3 AND L8
L10        72287 S TEMPERATURE (S) (CORRESPOND? OR RESPONSE)
L11            0 S L9 AND L10
L12       122140 S TEMPERATURE (S) (CHANG? OR VARIAN?)
L13            1 S L9 AND L12
L14        19644 S CURIE POINT
L15          379 S L3 AND  L14
L16      4076235 S SIMULAT? OR DEMONSTRAT?
L17            8 S L15 AND L16
L18            8 DUP REM L17 (0 DUPLICATES REMOVED)

=> s float?
L19       63389 FLOAT?

=> s l15 and l19
L20            0 L15 AND L19

=> s temperature
L21     1266014 TEMPERATURE

=> s l15 and l21
L22           57 L15 AND L21

=> dup rem l22
PROCESSING COMPLETED FOR L22
L23            57 DUP REM L22 (0 DUPLICATES REMOVED)

=> d ibib abs l23 1-10

L23  ANSWER 1 OF 57  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:          2003:217423  CAPLUS
TITLE:                     Magnetic recording system. [Machine
                           Translation].
INVENTOR(S):               Kikitsu,  Tetsu; Kai,  Tadashi; Nagase,  Toshihiko;
                           Maeda,  Tomoyuki; Akiyama,  Junichi
PATENT ASSIGNEE(S):        Toshiba Corp., Japan
SOURCE:                    Jpn. Kokai Tokkyo Koho, 17 pp.
                           CODEN: JKXXAF
DOCUMENT TYPE:             Patent
LANGUAGE:                  Japanese
FAMILY ACC. NUM. COUNT:    1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
     ---------------   ----  --------      ---------------  --------
     JP 2003085702      A2   20030320      JP 2001-279858   20010914
PRIORITY APPLN. INFO.:                  JP 2001-279858     20010914
AB   [Machine Translation of Descriptors]. It overcomes the thermal
     fluctuation limit, it designates that the thermal assist magnetic
     recording system which does not have the magnetization
     disappearance with thermal fluctuation acceleration is offered as purpose.
     In order with respect to functional layer and the functional layer which
     are formed on the non magnetic baseplate and the non
     magnetic baseplate, consist of curie point
     TccFl and the magnetic material which possesses magnetic
     anisotropy energy density KucFl to cause antiferromagnetism
     switched connection interaction at the aforementioned functional
     layer and room temperature, in impressing the magnetic
     field in heating expedient and the record layer which heat record layer
     and functional layer and the record layer which consist of the
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magnetic particle which possesses the **magnetic** anisotropy energy density KucR1 above **curie point** TccR1 and 5106erg/cc which are higher than either the aforementioned **curie point** TccF1 and the record **temperature** Tw which are laminated and the non-**magnetic** material which was formed between this to record **temperature** Tw depending The **magnetic** recording system which possesses with the **magnetic** recording expedient which records signal **magnetization**.

L23 ANSWER 2 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:185470 CAPLUS
DOCUMENT NUMBER: 136:256060
TITLE: Permanent **magnets**, **magnetic** cores having the **magnets** as bias **magnets**, and inductance parts using cores thereof
INVENTOR(S): Fujiwara, Teruhiko; Ishii, Masayoshi; Hoshi, Haruki; Isogai, Keita; Matsumoto, Hatsuo; Ito, Toru; Ambo, Tamiko
PATENT ASSIGNEE(S): Tokin Corporation, Japan
SOURCE: PCT Int. Appl., 120 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002021543	A1	20020314	WO 2001-JP7831	20010910
W: CN, JP, KR, NO, SG, VN				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
EP 1321950	A1	20030625	EP 2001-963554	20010910
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
NO 2003001073	A	20030507	NO 2003-1073	20030307

PRIORITY APPLN. INFO.:

JP 2000-272656	A	20000908
JP 2000-325858	A	20001025
JP 2000-352722	A	20001120
JP 2000-356669	A	20001122
JP 2000-356705	A	20001122
JP 2000-360646	A	20001128
JP 2000-360866	A	20001128
JP 2000-361077	A	20001128
JP 2001-22892	A	20010131
JP 2001-117665	A	20010417
WO 2001-JP7831	W	20010910

AB A permanent **magnet** which is a bonded **magnet** comprising a **magnet** powder and a resin in a resin content of 20 vol. or higher and has a resistivity of 0.1 .OMEGA. cm or more, wherein the **magnet** powder is a rare earth **magnet** powder having an intrinsic coercive force of 5 kOe or more, a **Curie point** Tc of 300 .degree. or higher and an av. particle diam. of 2.0 .mu.m to 50 .mu.m. The permanent **magnet** can be suitably used as a bias **magnet** which is arranged at a gap of a **magnetic** core in order to impart excellent d.c. superimposing characteristics and also excellent core loss characteristics to the **magnetic** core. For use in a **magnetic** core of inductance parts which are subjected to soldering reflow treatment, a bonded **magnet** having a resin content of 30 or more is used, wherein use is made of a Sm-Co **magnet** powder having an intrinsic coercive force of 10 kOe or more, a **Curie point** Tc of 500 .degree. or higher and an av. particle diam. of 2.5 .mu.m or more. This bonded **magnet**

permits the prepn. of a thin plate **magnet** having a thickness of 500 .mu.m or less for use in inductance parts of the miniature size.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 3 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:398180 CAPLUS
DOCUMENT NUMBER: 137:101865
TITLE: Room-**temperature magnetoresistance** in La0.67Sr0.33Mn1-xCoxO3
AUTHOR(S): Hu, Jifan; Qin, Hongwei; Chen, Juan; Zheng, R. K.
CORPORATE SOURCE: Department of Physics, Shandong University, Jinan, 250100, Peop. Rep. China
SOURCE: Journal of Applied Physics (2002), 91(10, Pt. 3), 8912-8914
CODEN: JAPIAU; ISSN: 0021-8979
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The substitution of Co for Mn in La0.67Sr0.33Mn1-xCoxO3 lowers the Curie temp. TC and the metal-insulator transition temp. TMI, accompanying the increase of the resistivity due to the weakening of the double-exchange interaction. The difference value between the TC and the TMI increases with Co substitution which may be attributed to local inhomogeneities in **magnetic** and electronic transport properties within the doped sample. There is an enhancement of the room temp. **magnetoresistance** .DELTA.R/R0 induced by the substitution of Co for Mn in La0.67Sr0.33Mn1-xCoxO3, which may be **connected** with the shift of the Curie temp. TC and metal-insulator transition temp. TMI to the near room temp. through the substitution. Values of the room temp. **magnetoresistance** .DELTA.R/R0 for La0.67Sr0.33Mn1-xCoxO3 depend not only on the TC but also on the TMI.
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 4 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:318314 CAPLUS
DOCUMENT NUMBER: 137:178463
TITLE: Destabilization of the cooperative Jahn-Teller effect in Sm0.2Ca0.8MnO3 by Ru-doping
AUTHOR(S): Autret, C.; Martin, C.; Maignan, A.; Hervieu, M.; Raveau, B.; Andre, G.; Bouree, F.; Kurbakov, A.; Trounov, V.
CORPORATE SOURCE: Laboratoire CRISMAT, ISMRA et Universite de Caen, UMR 6508 associee au CNRS 0, Caen, 14050, Fr.
SOURCE: Journal of Magnetism and Magnetic Materials (2002), 241(2-3), 303-314
CODEN: JMMMDC; ISSN: 0304-8853
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The structural study of Sm0.2Ca0.8MnO3 and Sm0.2Ca0.8Mn0.9Ru0.1O3 vs. temp. was carried out by neutron diffraction and electron microscopy in **connection** with the **magnetic** and transport properties. A structural transition from a Pnma **paramagnetic** insulating structure to a P21/m C-type **antiferromagnetic** insulating state at TN .apprxeq. 150 K is obsd. for the undoped phase. This low temp. monoclinic structure results from a cooperative Jahn-Teller (JT) distortion of Mn cations, hindering the appearance of **magnetoresistance** in Sm0.2Ca0.8MnO3. In contrast, the Ru-doped phase, which exhibits two **magnetic** transitions at TC .apprxeq. 200 and TN .apprxeq. 110 K, keeps the Pnma structure in the whole temp. range, from 4 to 300 K, showing that Ru-doping destabilizes the JT effect. The influence of Ru doping upon the structure and the appearance of

ferromagnetism and metallicity in Sm0.2Ca0.8MnO3 is discussed by comparing its behavior with those of the x = 0.90, 0.85, and 0.80 samples in the Sm1-xCaxMnO3 series.

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 5 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:472547 CAPLUS
DOCUMENT NUMBER: 137:318793
TITLE: Theoretical aspects of sputtering of **magnetic** materials near the **Curie point**
AUTHOR(S): Devyatko, Yu. N.; Rogozhkin, S. V.
CORPORATE SOURCE: Moscow Engineering and Physics Institute (The State University), Moscow, 115409, Russia
SOURCE: Vacuum (2002), 66(2), 123-132
CODEN: VACUAV; ISSN: 0042-207X
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new approach for describing anomalies in sputtering of **magnetic** materials near the Curie temp. is proposed. The energy of sublimation is shown to have no anomalies in this temp. range. The anomalies in sputtering of **magnetic** materials are **connected** with significant increase of evapn. of weakly bounded surface atoms from the hot spots created by incident ions.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 6 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:422251 CAPLUS
DOCUMENT NUMBER: 135:146044
TITLE: Influence of microstructure on thermal relaxation in nanocrystalline soft **magnetic** materials
AUTHOR(S): LoBue, M.; Basso, V.; Beatrice, C.; Tiberto, P.; Bertotti, G.
CORPORATE SOURCE: IEN Galileo Ferraris, INFM, Turin, I-10125, Italy
SOURCE: Journal of Applied Physics (2001), 89(11, Pt. 2), 7463-7465
CODEN: JAPIAU; ISSN: 0021-8979
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The interplay between activation vols. and microstructure is studied in nanocryst. Fe73.5Cu1Nb3Si13.5B9 (Finemet) alloys. Expts. are performed beyond the **Curie point** of the amorphous matrix, where relaxation effects are relevant. Measurements are analyzed within a theor. framework where hysteresis and relaxation phenomena are **jointly** described. In highly crystd. samples **magnetization** processes are characterized by a unique length scale. In poorly crystd. samples the system behavior is controlled by a distribution of characteristic vols. related to structural disorder.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 7 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:589371 CAPLUS
DOCUMENT NUMBER: 135:312412
TITLE: **Magnetization** process and **magnetic** viscosity in soft nanocrystalline materials at elevated **temperature**
AUTHOR(S): LoBue, M.; Basso, V.; Tiberto, P.; Beatrice, C.; Bertotti, G.
CORPORATE SOURCE: IEN Galileo Ferraris and INFM, Turin, I-10125, Italy
SOURCE: Journal of Magnetism and Magnetic Materials (2001),

226-230(Pt. 2), 1487-1489
CODEN: JMMMDC; ISSN: 0304-8853
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Hysteresis and relaxation properties are studied in nanocryst. Finemet-type materials, prepd. with different cryst. vol. fractions, beyond the **Curie point** of the amorphous matrix. The dependence on temp. and field rate of the measured coercive fields is discussed. The **connection** between activation vols. and structural aspects is analyzed.
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 8 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:827413 CAPLUS
DOCUMENT NUMBER: 136:111418
TITLE: Free spin-fluctuating lattice polarons as an alternative to small polarons
AUTHOR(S): Nagaev, E. L.; Farzetdinova, R. M.
CORPORATE SOURCE: Institute of Radioengineering and Electrotechnics, RAS, Moscow, 101999, Russia
SOURCE: Physics Letters A (2001), 290(3-4), 187-192
CODEN: PYLAAG; ISSN: 0375-9601
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB High-**binding**-energy small polarons contradict stability condition for the lattice. In **magnetic** semiconductors and manganites above the **Curie point** combined low-mobility **magnetic**-lattice polarons are possible. The free electron (hole) self-trapping occurs due to fluctuations of their spins following the fluctuations of the local **magnetic** moment, and to the lattice polarization.
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 9 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:312895 CAPLUS
DOCUMENT NUMBER: 133:34642
TITLE: Electron correlation effects at the Gd(0001) surface
AUTHOR(S): Shick, A. B.; Pickett, W. E.; Fadley, C. S.
CORPORATE SOURCE: Department of Physics, University of California, Davis, CA, 95616, USA
SOURCE: Journal of Applied Physics (2000), 87(9, Pt. 2), 5878-5880
CODEN: JAPIAU; ISSN: 0021-8979
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors have performed full-potential linearized APW calcns. of the Gd(0001) surface using the local d. approxn. (LDA) together with the Hubbard U (LDA+U) total energy functional. The use of LDA+U instead of LDA total energy calcns. leads to a **ferromagnetic** ground state for both bulk Gd and the Gd surface, in agreement with exptl. observation. The calcd. downward shift of 4f eigenvalues for the Gd surface is in agreement with exptl. obsd. **binding** energies. Surface strain relaxation leads to a 90% enhancement of the interlayer surface-to-bulk effective exchange coupling. Application of a Landau-Ginzburg-type theory yields a 30% enhancement of the Curie temp. at the surface, in very good agreement with the expt.
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 10 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:185567 CAPLUS
DOCUMENT NUMBER: 132:273066
TITLE: Dynamical mean-field theory of a simplified double-exchange model
AUTHOR(S): Letfulov, B. M.
CORPORATE SOURCE: Ural Division of Russian Academy of Sciences, Institute of Metal Physics, Yekaterinburg, 620219, Russia
SOURCE: European Physical Journal B: Condensed Matter Physics (2000), 14(1), 19-28
CODEN: EPJBFY; ISSN: 1434-6028
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Simplified double-exchange model including transfer of the itinerant electrons with spin parallel to the localized spin in the same site and the indirect interaction J of kinetic type between localized spins is comprehensively studied. The model is exactly solved in infinite dimensions. The exact equations describing the main ordered phases (**ferromagnetic** and **antiferromagnetic**) are obtained for the Bethe lattice with z .fwdarw. .infin. (z is the coordination no.) in anal. form. The exact expression for the generalized **paramagnetic** susceptibility of the localized-spin subsystem is also obtained in anal. form. Temp. dependence of the uniform and the staggered susceptibilities has deviation from Curie-Weiss law. Dependence of Curie and Neel temps. on itinerant-electron concn. is discussed to study instability conditions of the **paramagnetic** phase. Anomalous temp. behavior of the chem. potential, the thermopower and the sp. heat is studied near the **Curie point**. It is found for J = 0 that the system is unstable towards temp. phase sepn. between **ferromagnetic** and **paramagnetic** states. A phase sepn. **connected** with **antiferromagnetic** and the **paramagnetic** phases can occur only at J* > J* 0.318. Zero-temp. phase diagram including the phase sepn. between **ferromagnetic** and **antiferromagnetic** states is given.
REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L23 ANSWER 11 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:440106 CAPLUS
DOCUMENT NUMBER: 131:70844
TITLE: Method for the preparation of inductively heatable **magnetic** particles with affinity ligand **binding** polymers and applications in bioanalytics and therapy
INVENTOR(S): Mueller-Schulte, Detlef
PATENT ASSIGNEE(S): Germany
SOURCE: Ger. Offen., 10 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19800294	A1	19990708	DE 1998-19800294	19980107

PRIORITY APPLN. INFO.: DE 1998-19800294 19980107
AB The invention concerns a method for the prepn. of particles with two functional components; inductively heatable **magnetic** particles

that based on their **Curie point** control the temp.; and a polymer matrix that **binds** the ligands that participate in temp. dependent reactions. The particles are used in various bioanal. and therapeutic procedures, e.g. DNA sequencing; inactivation of virus, bacterial or fungal cells in blood or blood products; tumor therapy with heating. The particles contain min. 20% ferrous or ferric **magnetic** material or **superparamagnetic** colloids with Currie points 40-250 .degree.C; e.g. **magnetite**, double-metal oxides/hydroxides of the general formula Me1-xZnxFe2O4; Me = Fe, Co, Ni. The polymer matrix is composed of natural or synthetic homopolymers or copolymers, e.g. polysaccharides, methylmethacrylate-vinylpyrrolidone copolymer. Ligands that are immobilized onto the polymer matrix are antibodies, blood coagulation factors, oligonucleotides, enzymes, avidin, biotin, cell receptors, cell surface markers, lectins, glycoproteins. The particles are produced via emulsion polymn., suspension polymn. or suspension crosslinking encapsulation. Thus particles were produced via suspension polymn. in a mixt. of vinylacetate, polyethyleneoxide, triallylcyanurate and **magnetite** colloid DHYS1, followed by hydrolysis to form polyvinylalc. 5'-Amino modified DNA was immobilized. Using a **magnetic** coil with 5 windings, a diam. of 5 cm and length of 12 cm, at 500 kHz and **magnetic** field strength 11 kA/m, the beads were heated for 2 min, the hybridized ds DNA was denatured and used for further steps.

L23 ANSWER 12 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:450632 CAPLUS
DOCUMENT NUMBER: 127:184587
TITLE: Critical dynamics in EuO below the **Curie point**
AUTHOR(S): Schorr, S.; Vorderwisch, P.; Mezei, F.
CORPORATE SOURCE: Hahn-Meitner Inst. Berlin, Berlin, D-14109, Germany
SOURCE: Physica B: Condensed Matter (Amsterdam) (1997), 234-236, 749-751
CODEN: PHYBE3; ISSN: 0921-4526
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Earlier studies of the crit. dynamic behavior above the **Curie point** on Fe and EuO reveal that scaling does not in general hold. It was pointed out that this breakdown of scaling is related to the dipolar interaction. Extending the study to the **ferromagnetic** region, the authors obsd. low-frequency spin waves below, but very close to the transition temp. by inelastic neutron scattering. The authors found the common scaling behavior for the spin wave energy to be valid despite the effect of dipolar interaction. In this **connection** the authors studied also the ratio of the dynamic amplitude above and below the **Curie point** for EuO and other Heisenberg **ferromagnets** and showed that the ratio (b) is a universal value. However, the authors found strong deviations from the common .GAMMA. approx. q4 behavior for the spin wave linewidth for which still no theor. explanation exists.

L23 ANSWER 13 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:67849 CAPLUS
DOCUMENT NUMBER: 126:112172
TITLE: Properties and stability of ferrite materials for **magnetic temperature** transducers
AUTHOR(S): Tanasoiu, C.; Miclea, C.; Dimitriu, E.
CORPORATE SOURCE: Lab. Oxidic Ceramic Materials, Inst. Physics Technology Materials, Bucharest, R-67900, Rom.
SOURCE: Materials Science & Engineering, B: Solid-State Materials for Advanced Technology (1996), B41(3), 297-303
CODEN: MSBTEK; ISSN: 0921-5107

PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Magnetic** materials in the CuZnTi ferrite system with the chem. compn. Cu1-xZnxTiyFe2-yO4, with 0.5 .ltoreq. x .ltoreq. 0.62 and 0.ltoreq.y.ltoreq.0.05 were studied as a function of sintering temp. and time and cooling speed to see the influence of these factors upon the Curie temp. and the permeability behavior around the **Curie point**. The quality of the **magnetic** temp. transducers made from such materials is directly **connected** with the value of the slope of the .mu.(T) curve. The higher the slope the more sensitive will be the transducer. Slopes .ltoreq.50%.degree.C-1 were obtained by a proper cooling of the samples, this value being the highest reported so far for such materials. The results are discussed in terms of the ionic distribution of the Cu, Zn and Ti ions over the tetrahedral and octahedral sites of the spinel lattice. The materials proved to be stable in time if the temp. does not exceed 200.degree., but higher temps. may induce irreversible change in the material structure due to cation migration and electron transfer from copper ions to iron ions.

L23 ANSWER 14 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:829479 CAPLUS
DOCUMENT NUMBER: 123:357035
TITLE: **Magnetic** properties of some amorphous alloys annealed by dynamic Joule heating: Influence of **temperature** and applied stress
AUTHOR(S): Houzali, A.; Alves, F.; Perron, J. C.
CORPORATE SOURCE: Laboratoire de Genie Electrique de Paris, C.N.R.S., Gif-sur-Yvette, F-91192, Fr.
SOURCE: Materials Science Forum (1995), 179-181(Mechanically Alloyed and Nanocrystalline Materials), 615-20
CODEN: MSFOEP; ISSN: 0255-5476
PUBLISHER: Trans Tech
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors present the **magnetic** properties of two amorphous alloys annealed by a new exptl. set-up in which servo-controls of max. temp., applied tensile stress (range 10 to 100 MPa) and feed rate were performed. The main difference between the two alloys rests on the stress dependence of **magnetic** properties. While in the Fe-based alloy, the **magnetization** curves and, to a less extent, the coercive field and the losses are insensitive to the stresses applied during annealing, in the Co-based alloy the authors observe the opposite. The authors think that the **joint** effect of temp. and stress acts on the at. diffusion and causes creep that the authors obsd. if stresses are sufficient. The setting-up of **magnetic** induced anisotropies by the authors' annealing process probably takes place during the cooling part and close to the Curie temp., the sign of **magnetostriction** seems to play a role in the energy balance with a nonelastic contribution.

L23 ANSWER 15 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:321120 CAPLUS
DOCUMENT NUMBER: 122:203523
TITLE: **Paramagnetic** Curie **temperature** is an arithmetic average of the interspin coupling constants
AUTHOR(S): Czachor, Andrzej
CORPORATE SOURCE: Institute of Physics, Polish Academy of Sciences, Al.Lotnikow 32/46, Warsaw, 02-668, Pol.
SOURCE: Journal of Magnetism and Magnetic Materials (1995), 139(3), 355-8
CODEN: JMMMDC; ISSN: 0304-8853
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal

LANGUAGE: English
AB The **paramagnetic** Curie temp. tensor .THETA. for any **magnetic** structure, accounting for the anisotropy of the interspin coupling between localized spins, was derived. For cubic crystals and for disordered systems exhibiting overall isotropy the tensor is a scalar one. The Curie temp. is then essentially the arithmetic av. of the interspin coupling consts. (exchange integrals) of the Hamiltonian. It is emphasized that in the presence of both **ferromagnetic** and **antiferromagnetic links** between spins both types of coupling mutually reduce each other, so the role of the coupling expressed by the Curie temp. may sometimes look less than it is in reality.

L23 ANSWER 16 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1994:593789 CAPLUS
DOCUMENT NUMBER: 121:193789
TITLE: Structure and **magnetic** properties of Nd(FeB)n for 2 < n < 8. Evidence of eigen Curie **temperature magnetic** sublattices
AUTHOR(S): Khan, Y.; Kneller, E.; Wang, R. J.
CORPORATE SOURCE: Inst. Werkstoffe Elektrotech., Ruhr-Univ., Bochum, Germany
SOURCE: Physica Status Solidi A: Applied Research (1994), 142(2), 499-508
CODEN: PSSABA; ISSN: 0031-8965
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The cryst. Nd(FeB)n compds., obtained by crystg. the melt-quenched amorphous counterparts, form solid solns. of the NdCo4B4-type structure and are commensurate for n < 4, whereas these are incommensurate for n .gtoreq. 4, the incommensurability increasing with increasing n. The crystal structure of these materials can be described by the space group P.hivin.4, and is made up of 2 **magnetically** weakly coupled, eigen Curie temp. **magnetic** sublattices, 1 body centered tetragonal contg. only Nd atoms (Curie temp. of the order of 14 to 18 K) and the other primitive tetragonal contg. only Fe and B atoms (Curie temp. of the order of 938 K). The **magnetic** ordering of the Fe-B sublattice takes place after completion of Fe-Fe **links** on increasing Nd vacancies with increasing n.

L23 ANSWER 17 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:47247 CAPLUS
DOCUMENT NUMBER: 116:47247
TITLE: A thermodynamic study of the R2Fe14X (R = rare earth, X = boron, carbon) at the Curie **temperature**
AUTHOR(S): Luis, F.; Mate, B.; Pique, C.; Burriel, R.; Bartolome, J.; Buschow, K. H. J.
CORPORATE SOURCE: ICMA, Univ. Zaragoza, Zaragoza, 50009, Spain
SOURCE: Journal of Magnetism and Magnetic Materials (1991), 101(1-3), 414-16
CODEN: JMMMDC; ISSN: 0304-8853
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The abs. heat capacity of compds. of the R2Fe14B series, with R = Nd, Gd, Er, and the **nonmagnetic** Lu and Y, together with the Lu2Fe14C have been measured through the Curie temp. region by differential scanning calorimetry with the heat pulse technique. The anomalous heat capacity have been deduced and the crit. entropies analyzed. The results are discussed in **connection** to the L and S components of the 4f electrons of the rare earth element.

L23 ANSWER 18 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1991:219784 CAPLUS
DOCUMENT NUMBER: 114:219784
TITLE: Correlation between exchange constant and Curie

temperature of iron-chromium-boron and iron-vanadium-boron glassy alloys
AUTHOR(S): Kovac, J.; Potocky, L.; Novak, L.; Kisdi-Koszo, E.
CORPORATE SOURCE: Inst. Exp. Phys., Slov. Acad. Sci., Kosice, Czech.
SOURCE: Acta Physica Slovaca (1990), 40(4), 232-6
CODEN: APSVCO; ISSN: 0323-0465
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The Curie temp. and the exchange const. in **ferromagnets** are in a direct **connection**, the proportional factor depends on the at. structure of the material. In Fe-Cr-B and Fe-V-B metallic glasses the correlation between the exchange const.(A) and the Curie temp.(Tc) was found. The change of the slope of A vs. Tc indicates some change in the short-range order of the investigated alloy series.

L23 ANSWER 19 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1990:89964 CAPLUS
DOCUMENT NUMBER: 112:89964
TITLE: Effect of structural relaxation on Curie **temperature** and **magnetostriction** investigated by **magnetoelastic** waves in Metglas
AUTHOR(S): Lanotte, L.; Luponio, C.; Porreca, F.
CORPORATE SOURCE: Fac. Ing., Univ. Napoli, Naples, Italy
SOURCE: Nuovo Cimento della Societa Italiana di Fisica, D: Condensed Matter, Atomic, Molecular and Chemical Physics, Fluids, Plasmas, Biophysics (1989), 11D(12), 1763-72
CODEN: NCSDDN; ISSN: 0392-6737
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The temp. dependence of **magnetoelastic** wave amplitude, A, was measured during thermal cycles in Metglas 2826. When the Curie temp., Tc, has been reached, the A value vanishes due to the fall of the **magnetoelastic** coupling in the **paramagnetic** state. This allows evaluation of the Tc temp. The latter increases after the iterated thermal treatments while the **magnetic** anisotropy Ku, Tc and A approach satn. after the same no. of thermal cycles; this suggests that the structural relaxation produced by annealing is the microscopic mechanism governing all 3 phys. quantities. The **connection** between Ku and A is explained by means of the longitudinal **magnetostriction**.

L23 ANSWER 20 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1990:68373 CAPLUS
DOCUMENT NUMBER: 112:68373
TITLE: A simplified model to calculate Curie **temperature** of **ferrimagnetic** spinels
AUTHOR(S): Upadhyay, R. V.; Baldha, G. J.
CORPORATE SOURCE: Dep. Phys., Bhavnagar Univ., Bhavnagar, 364 002, India
SOURCE: Indian Journal of Physics, A (1989), 63A(8), 835-8
CODEN: INJADP; ISSN: 0252-9262
DOCUMENT TYPE: Journal
LANGUAGE: English
AB By using the statistical model of M. A. Gilleo (1960) and taking into account the existence of varying nos. of **linkages** of different strengths in substituted **ferrimagnetic** spinel compds., a math. relation is formulated for detg. the Curie temp. of **ferrimagnetic** spinels. Curie temps. calcd. for some spinel ferrites by using the relation and ion distributions known from x-ray diffraction data agree well with exptl. obsd. Curie temp. values.

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L23 ANSWER 21 OF 57 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1987:447901 BIOSIS
DOCUMENT NUMBER: BA84:103739
TITLE: PYROLYSIS AND SOFT IONIZATION MASS SPECTROMETRY OF AQUATIC-TERRESTRIAL HUMIC SUBSTANCES AND SOILS.
AUTHOR(S): SCHULTEN H-R
CORPORATE SOURCE: FACHHOCHSCHULE FRESENIUS, DEP. TRACE ANALYSIS, DAMBACHTAL 20, 6200 WIESBADEN, W. GER.
SOURCE: J ANAL APPL PYROLYSIS, (1987) 12 (2), 149-186.
CODEN: JAAPDD. ISSN: 0165-2370.
FILE SEGMENT: BA; OLD
LANGUAGE: English

AB The rapid, reproducible, chemical characterization of complex environmental materials such as plants, humic substances and whole soil can be performed by controlled thermal degradation. Except for drying and milling no pre-treatment of the samples is required. Biomacromolecular cleavage during a short degradation step directly in the ion source of a mass spectrometer results in the production of high-mass chemical subunits. Short reaction times and small amounts of sample favour the generation of large, thermal fragments, i.e., chemical building blocks, which can be identified and correlated with the structure of the polymeric biomaterials investigated. The principal aim is to monitor the primary, thermal fragmentation by high molecular ion intensities of the pyrolyzates and to avoid consecutive, mass spectrometric fragmentation as far as possible. For the detection and identification of the pyrolysis (Py) products, a combination with time-/**temperature**-controlled mass spectrometry (MS) is used. Typical heating rates are 0.2-10.degree.C/s and the **temperature** range is 50-800.degree.C. Soft ionization techniques such as field ionization (FI), field desorption, chemical ionization (CI) and, to some extent, fast atom bombardment are employed in the positive and negative modes. The results of direct Py-MS are supported by high-resolution mass measurements using electric or photographic detection and **Curie-point** pyrolysis in combination with gas chromatography-electron ionization/FI/CIMS and library searches for the identification of the pyrolysis products. Fingerprinting and time-resolved Py-MS of aquatic and terrestrial humic substances are reported. The methodology for the investigations of dynamic processes during the volatilization and thermal decomposition of these complex biomaterials is illustrated. Weight loss curves and the **temperature** function of accurate molecular weight averages for aquatic fulvic and humic acid are derived from the Py-FIMS data. Initial results on the differentiation of soil horizons in a moder profile by Py-FIMS and pattern recognition are presented. In particular, the chemometric evaluation appears promising for future Py-MS studies of humic substances and whole soils, but also for fossil fuels, synthetic polymers and food. In an integrated approach, the **linking** of conventional chemical and spectroscopic data with the high-mass signals in pyrolysis-mass spectra will be the focus of forthcoming work. Preliminary results for combining wet-chemical data with those of 13C nuclear **magnetic** resonance, Fourier transform infrared and electron spin resonance spectroscopy are put forward in the survey. Finally, initial results of pilot studies to detect biocides such as atrazine directly in soils using Py-FIMS are demonstrated.

L23 ANSWER 22 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:555195 CAPLUS
DOCUMENT NUMBER: 105:155195
TITLE: Sintered ferrite composites for **temperature** sensors
INVENTOR(S): Okuya, Katsunobu; Harada, Hiroshi
PATENT ASSIGNEE(S): TDK Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60260468	A2	19851223	JP 1984-117334	19840607

PRIORITY APPLN. INFO.: JP 1984-117334 19840607

AB Temp. sensors having continuously changed **magnetic** flux d. rather than stepwise change over a temp. range (from -50 to +50.degree.) useful for actuators, are sintered ferrite composites having various Curie points (Tc) and laminated with sintering-generated diffused compns. to each next layer for continuous and smooth transition of satd. **magnetic** flux d. Thus, 25 sheets having gradually changing compns. in Tc at 0.3-60.degree. by providing various compn. in (MnO)y(ZnO)z(Fe2O3)x (x + y + z = 100) are bound with **binders** contg. 3.5 wt.% poly(vinyl butyral) and 1.5 wt.% ethylcellulose at 80.degree.. The characteristic curve for satd. **magnetic** flux d. vs. temp. had 35-65 G/degree at 10-50.degree. with fluctuation 30%.

L23 ANSWER 23 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1985:207540 CAPLUS
DOCUMENT NUMBER: 102:207540
TITLE: **Temperature** control during annealing
INVENTOR(S): Duncombe, Edward; Thomson, Alexander; Evans, Robert Arthur
PATENT ASSIGNEE(S): United Kingdom Atomic Energy Authority , UK
SOURCE: Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 136810	A2	19850410	EP 1984-305806	19840824
EP 136810	A3	19861126		
EP 136810	B1	19890524		

R: DE, FR, IT

PRIORITY APPLN. INFO.: GB 1983-23995 19830907

AB Ferritic stainless steel tubes are welded or brazed to the plates of shell and tube heat exchangers. The **joints** are annealed with control of temp. near the **Curie point**. Process control and app. are simplified, esp. for the heat exchangers having a high d. of tube welds. Elec. control circuit is provided for the annealing after brazing or welding. The method is suitable for internal access into the tubes, esp. in the heat exchangers of nuclear reactor systems having a repair tube brazed inside an original tube.

L23 ANSWER 24 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1985:141931 CAPLUS
DOCUMENT NUMBER: 102:141931
TITLE: Volume effect on the Curie **temperature** of dysprosium-iron-aluminum (Dy2Fe17-yAly) compounds
AUTHOR(S): Radwanski, R. J.
CORPORATE SOURCE: Dep. Solid State Phys., Acad. Min. Metall., Krakow, 30-059, Pol.
SOURCE: Journal of Physics F: Metal Physics (1985), 15(2), 459-65
CODEN: JPFMAT; ISSN: 0305-4608
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The Curie temp. Tc of the Dy2Fe17-yAly series was measured by detg. a.c. susceptibility. The Al concn. dependence of TC initially (up to Y = 3) increases, although the **magnetic** Fe atoms are gradually dild. This effect is not **connected** with a crystal structure, but is due to an increase of the av. Fe-Fe distance caused by Al substitution. The Curie temp. of all heavy-rare-earth-Fe compds. of the 2:17 type increases smoothly with increasing vol. A value of 6000 K was detd. for dTC/d in V, resulting in a value of -17 for the **magnetic** Grueneisen parameter .GAMMA.m = -d ln TC/d ln V. As the Curie temp. in these compds. is governed mainly by the Fe-Fe exchange interaction, a strong dependence of the JFe-Fe coupling on the 3d-3d distance is inferred. The Bethe-Neel dependence and a prediction of the **magnetic** Grueneisen parameter by using an itinerant-electron theory of **ferromagnets** are discussed.

L23 ANSWER 25 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1984:602850 CAPLUS
DOCUMENT NUMBER: 101:202850
TITLE: **Temperature** dependence of the **magnetostriction** constant of nearly zero **magnetostriction** amorphous alloys
AUTHOR(S): Hernando, A.; Madurga, V.; Nunez de Villavicencio, C.; Vazquez, M.
CORPORATE SOURCE: Fac. C. Fis., Univ. Complutense, Madrid, Spain
SOURCE: Applied Physics Letters (1984), 45(7), 802-4
CODEN: APPLAB; ISSN: 0003-6951
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The temp. dependence of the **magnetostriction** const. .lambda.s, is presented for 2 Co-rich amorphous alloys which have a very low **magnetostriction** (.apprx.10-7). These measurements were carried out with the help of a new sensitive method, and a change of sign of .lambda.s was found exptl. at temps. below the **Curie point**. It was interpreted by taking into account the different temp. dependences of the single-ion and 2-ion contributions to .lambda.s. After **magnetic** annealing, a proportionality existed between .lambda.s and the **magnetic** induced anisotropy when they were measured at room temp. These results are interpreted in **connection** with the temp. dependence of .lambda.s.

L23 ANSWER 26 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1985:158382 CAPLUS
DOCUMENT NUMBER: 102:158382
TITLE: **Temperature** dependence of the lattice parameters of the spinel series copper zinc chromium selenide (CuxZn1-xCr2Se4) (x = 0.1, 0.3, 0.9, 1.9)
AUTHOR(S): Kusz, J.; Juszczyk, S.; Warczewski, J.
CORPORATE SOURCE: Inst. Phys., Silesian Univ., Katowice, 40007, Pol.
SOURCE: Conference on Applied Crystallography, [Proceedings] (1984), 11th(Vol. 2), 642-6
CODEN: PRCCDX; ISSN: 0208-8584
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Thermal expansion of CuxZn1-xCr2Se4 crystals was detd. for 0.1 .ltoreq. x .ltoreq. 1.0 and 100-570 K. An equation for the calcn. of lattice parameter a is given. The sudden change of slope of the curve for x = 0.3-1.0 shows approx. the Curie temp. and is **connected** with the **magnetostriction** effect on a. For x = 0.1 no slope change occurs because the sample is **antiferromagnetic** and the Neel temp. is <100 K. a Increases with increasing temp.

L23 ANSWER 27 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1983:623687 CAPLUS
DOCUMENT NUMBER: 99:223687

TITLE: A spin fluctuation theory of degenerate narrow bands - finite-**temperature magnetism** of iron
AUTHOR(S): Hasegawa, H.
CORPORATE SOURCE: Inst. Solid State Phys., Univ. Tokyo, Tokyo, Japan
SOURCE: Journal of Physics F: Metal Physics (1983), 13(9), 1915-29
CODEN: JPFMAT; ISSN: 0305-4608
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A previously developed theory of itinerant-electron **magnetism** at finite temps. is generalized to include the effect of degenerate multibands with t2g and eg symmetry by adopting the static functional integral method and the CPA. Numerical calcns. of the Curie temp., the **magnetization** curve, the amplitude of local moments, and the susceptibility are made for Fe by using the detailed d. of states generated by the recursion method for the tight-**binding** model. Calcd. results account for the finite-temp. properties of Fe. In particular, the calcn. explains the obsd. very weak temp. dependence in the spin-d. asphericity, which cannot be explained by the Stoner theory. The results are compared with those obtained by alternative approaches in which the 5 subbands are taken to be equiv.

L23 ANSWER 28 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1984:60510 CAPLUS
DOCUMENT NUMBER: 100:60510
TITLE: The density of states and Curie **temperature** of amorphous iron-boron alloys
AUTHOR(S): Khanna, S. N.; Wohlfarth, E. P.
CORPORATE SOURCE: Inst. Phys. Exp., Swiss Fed. Inst. Technol., Lausanne, CH-1015, Switz.
SOURCE: Physica B+C: Physics of Condensed Matter + Atomic, Molecular and Plasma Physics, Optics (Amsterdam) (1983), 123(1), 69-74
CODEN: PHBCDQ; ISSN: 0165-1757
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A structural model showing local order was established by a process of energy minimization for amorphous Fe-B alloys with 10-60% B. The electronic structure and d. of states curves were computed by the method of moments and the continued fraction method in the tight **binding** approxn. The d. of states at the Fermi energy 1st increases and then decreases as a function of B concn. This result agrees quant. with the obsd. variation of the Curie temp. Improvement in this respect is possible by considering the effects of topol. disorder.

L23 ANSWER 29 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1982:415807 CAPLUS
DOCUMENT NUMBER: 97:15807
TITLE: Effect of uniaxial stress on the Curie **temperature** in iron phosphide (Fe2P)
AUTHOR(S): Fujiwara, Hiroshi; Kadomatsu, Hideoki; Tohma, Kiyokazu
CORPORATE SOURCE: Fac. Sci., Hiroshima Univ., Hiroshima, 730, Japan
SOURCE: Journal of the Physical Society of Japan (1982), 51(5), 1401-5
CODEN: JUPSAU; ISSN: 0031-9015
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Shift of the Curie temp. Tc (.simeq.195 K) of Fe2P single crystal was measured in the presence of uniaxial stress. The stresses .ltoreq.80 bar were applied along the directions parallel and perpendicular to the c-axis (cdvt and c.perp.). The Tc's increased and decreased with increasing stress in the cases of c.dblvert. and c.perp., resp. and the av. values of dTc/dp's were: dTc/dp.dblvert. = 7.8 .times. 10-3 deg/bar and dTc/dp.perp.

= -6.4 .times. 10-3 deg/bar. The effect of stress on the exchange interactions between Fe atoms is discussed in **connection** with the pressure-induced **magnetic** transition previously found under hydrostatic high pressures.

L23 ANSWER 30 OF 57 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1983:181195 BIOSIS
DOCUMENT NUMBER: BA75:31195
TITLE: PYROLYSIS FIELD IONIZATION MASS SPECTROMETRY OF CARBOHYDRATES B. POLY SACCHARIDES.
AUTHOR(S): SCHULTEN H-R; BAHR U; GOERTZ W
CORPORATE SOURCE: INST. PHYSICAL CHEM., UNIV. BONN, WEGELERSTR. 12, 5300 BONN 1 G.F.R.
SOURCE: J ANAL APPL PYROLYSIS, (1982) 3 (3), 229-242.
CODEN: JAAPDD. ISSN: 0165-2370.
FILE SEGMENT: BA; OLD
LANGUAGE: English

AB The application of pyrolysis in combination with field ionization (FI) mass spectrometry for the characterization and identification of polysaccharides is reported. Polysaccharides such as xylan, agarose and alginic acid, which contain monomer subunits of different elemental composition, can be differentiated in a straightforward manner by the FI spectra of their **Curie-point** pyrolysates.
Polysaccharides with hexosyl subunits, such as cellulose, galactan, laminaran and mannan, were pyrolyzed by **Curie-point** pyrolysis and show photographically recorded FI spectra which differ in the relative heights of their pyrolysis peaks. Characteristic pyrolysis products are formed, which can be identified or assigned structures on the basis of accurate mass measurements, direct isotopic determination and by analogy with established chemical procedures and mechanisms. Oven pyrolysis of polysaccharides combined with electrical detection of the FI spectra at low mass resolution gives a higher sensitivity and better reproducibility for all peaks over the whole mass range. From sample amounts of about 40 .mu.g, spectra are obtained by raising the oven **temperature** automatically by 0.4.degree. C/s. Utilizing repetitive **magnetic** scanning, registration and signal processing by the data system, the standard deviation of the peak heights for 5 repeated measurements is about 10%. Accumulation of about 30 spectra in a limited mass range on a multi-channel analyzer gives results which vary by about 2-3% on average, despite a lower sample consumption (20-30 .mu.g). Oven pyrolysis between 250 and 400.degree. C yields significant differences in the spectra of differently **linked** mannans and allows an unequivocal differentiation of these isomers. Following FI, field desorption (FD) spectra were obtained from pyrolysis products condensed on the emitter surface by heating of the emitter wire between 10 and 30 mA. The cations of alkali metals, such as Na+, K+ and Cs+, can be registered in this way. Most interesting is the detection of the molecular ions of monomer and oligomer subunits of the polysaccharides as complementary analytical information in the FD mode. Obviously, condensation of these neutral, thermal products on the emitter surface occurs without field ionization and desorption is initiated by supply of thermal energy to the adsorbed sample layer.

L23 ANSWER 31 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1981:166549 CAPLUS
DOCUMENT NUMBER: 94:166549
TITLE: The phonon contribution to the Stoner factor, its isotope effect on the Curie **temperature**, and the **connection** to triplet pairing
AUTHOR(S): Appel, J.; Fay, D.
CORPORATE SOURCE: Fachber. Phys., Univ. Hamburg, Hamburg, Fed. Rep. Ger.
SOURCE: Conference Series - Institute of Physics (1981), 55(Phys. Transition Met.), 233-6
CODEN: IPHSAC; ISSN: 0373-0751

DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A discussion with 7 refs.

L23 ANSWER 32 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1981:166118 CAPLUS
DOCUMENT NUMBER: 94:166118
TITLE: An investigation of solid solutions of hydrogen in thulium at low **temperature** and of their behavior under electron irradiation
AUTHOR(S): Daou, J. N.; Vajda, P.; Lucasson, A.; Lucasson, P.
CORPORATE SOURCE: Defauts Metaux, Univ. Paris-Sud, Orsay, F-91405, Fr.
SOURCE: Journal of Physics C: Solid State Physics (1981), 14(2), 129-42
CODEN: JPSOAW; ISSN: 0022-3719
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The elec. resistivity of .alpha.-phase solid solns. of Tm(H,D)x, (0.005 .ltoreq. x .ltoreq. 0.1) was studied at 4.2-200 K. Concn.-dependent thermal cycling phenomena in the **magnetically** ordered region below TN and an anomaly at 160-180 K were obsd., the latter showing an isotope effect. Damage introduced by electron beam irradn. at 0.4 MeV at low temp. interacts with the **magnetic** structures of Tm, this effect disappearing after annealing at T > TN, while the defects themselves recover in the region of the anomaly. A model is proposed which implies a H-H (D-D) pair configuration as the stable low-temp. form, with a concn.- and isotope-mass-dependent **binding** energy. These pairs are broken up under irradn., giving isolated atoms with a higher contribution to the elec. resistivity. The isolated atoms form into pairs again just below the anomaly, where they are dissocd. thermally afterwards.

L23 ANSWER 33 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1980:156784 CAPLUS
DOCUMENT NUMBER: 92:156784
TITLE: Sublimation rate of cobalt near its Curie **temperature**
AUTHOR(S): Sales, B. C.; Turner, J. E.; Maple, M. B.
CORPORATE SOURCE: Inst. Pure Appl. Phys. Sci., Univ. California, La Jolla, CA, 92093, USA
SOURCE: Physical Review Letters (1980), 44(9), 586-90
CODEN: PRLTAO; ISSN: 0031-9007
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The sublimation rates of Co was measured in the vicinity of its Curie temp. (TC = 1400 K) which show a relatively large change (.apprx.0.8 eV/atom) in the apparent activation energy for sublimation near TC. The results can be accounted for in terms of a simple model that incorporates into the sublimation process the temp. dependence of the **magnetic** contribution to the **binding** energy of a Co surface atom.

L23 ANSWER 34 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1980:577737 CAPLUS
DOCUMENT NUMBER: 93:177737
TITLE: **Magnetic** and structural investigations of dysprosium cobalt (DyCo2)-dyprosium aluminum (DyAl2) and gadolinium manganese (GdMn2)-gadolinium aluminum (GdAl2) compounds
AUTHOR(S): Slebarski, A.
CORPORATE SOURCE: Inst. Fiz., Uniw. Slaski, Katowice, 40-007, Pol.
SOURCE: Journal of the Less-Common Metals (1980), 72(2), 231-40
CODEN: JCOMAH; ISSN: 0022-5088
DOCUMENT TYPE: Journal

LANGUAGE: English
AB Investigations of intermetallic DyCo2-DyAl2 and GdMn2-GdAl2 compds. show disordered structures. For compds. with a cubic structure of the MgCu2 type, the rare earth atoms can partly occupy the Al or transition metal 16d positions. Consequently, the no. of **magnetic** sublattices increases and the **magnetic** moment per formula unit decreases. The character of the phase transitions was detd. from the temp. dependence of the lattice parameter and the specific **magnetization**. For a large Co concn. the phase transition in DyCo2-DyAl2 is first order. For GdMn2 the **ferrimagnetic-ferrimagnetic** transition at 86 K is **connected** with a first-order tetragonal-cubic structural transformation.

L23 ANSWER 35 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1980:14586 CAPLUS
DOCUMENT NUMBER: 92:14586
TITLE: A pressure cell for the measurement of the Curie **temperature** with the cubic-anvil press
AUTHOR(S): Yamamoto, Yoshiaki; Nakagiri, Nobuyuki; Nomura, Motoyuki; Tange, Hatsuo; Fujiwara, Hiroshi
CORPORATE SOURCE: Fac. Sci., Hiroshima Univ., Hiroshima, 730, Japan
SOURCE: Japanese Journal of Applied Physics (1979), 18(11), 2139-41
CODEN: JJAPA5; ISSN: 0021-4922
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A pressure cell was developed for the measurement of Curie temp., Tc, under pressure with the cubic-anvil type pressure app. By using the new cell, a nonlinear behavior similar to that obsd. by Leger et. al. (1972) was obsd. in the pressure dependence of Tc of Ni. The pressure derivs. of Tc at low pressure of disordered Ni-Mn alloys up to 23.2 at.% Mn were measured with the new cell and the std. press bomb **connected** to a pressure intensifier.

L23 ANSWER 36 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1980:151548 CAPLUS
DOCUMENT NUMBER: 92:151548
TITLE: The effect of carbon and titanium on the Curie **temperature** and saturation **magnetization** of nickel-(titanium, carbon)
AUTHOR(S): Loennberg, B.; Smith, Ulf
CORPORATE SOURCE: Uppsala Univ., Uppsala, Swed.
SOURCE: Prepr. - Eur. Symp. Powder Metall., 5th (1979), Meeting Date 1978, Volume 3, 359-64. Jernkontoret: Stockholm, Swed.
CODEN: 41VYAY
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Ni as a **binder** for cemented TiC was considered. The satn. **magnetization** and Curie temp. of Ni-Ti alloys contg. .ltoreq.12 at.% Ti decreased with increasing Ti content. Both quantities also decreased with increasing C content in Ni-Ti-C alloys contg. .ltoreq.11 Ti and .ltoreq.2.0 at.% C. The alloys were close to the single-phase region at the annealing temp. of 1150.degree.; effects of pptn. were considered.

L23 ANSWER 37 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1976:158930 CAPLUS
DOCUMENT NUMBER: 84:158930
TITLE: X-ray and **magnetic** investigations of the high-**temperature** phase in the cobalt-rich cobalt-vanadium alloy system
AUTHOR(S): Aoki, Y.; Yamamoto, M.
CORPORATE SOURCE: Res. Inst. Iron, Steel Other Met., Tohoku Univ., Sendai, Japan

SOURCE: Physica Status Solidi A: Applied Research (1976), 33(2), 625-32
CODEN: PSSABA; ISSN: 0031-8965
DOCUMENT TYPE: Journal
LANGUAGE: English
AB X-ray and **magnetic** studies were carried out for the fcc. Co-V alloys contg. V .ltoreq.30.1 at.%. The x-ray measurements showed that the lattice parameter does not obey Vegard's law in the whole compn. range obsd. in this work. The compn. dependence of the lattice parameter can be related to the **magnetic** moment. The satn. moment and the **Curie point** decrease with increasing V content, and the alloy shows a transition from **ferromagnetism** to **paramagnetism** near 23 at.% V. The **magnetic** behavior of these alloys is discussed in **connection** with the **magnetic** properties of the ordered hexagonal VCo3 compd.

L23 ANSWER 38 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1976:98593 CAPLUS
DOCUMENT NUMBER: 84:98593
TITLE: Structural and low-**temperature** **magnetic** studies on compounds Sm2Fe17 with aluminum substitution for iron
AUTHOR(S): McNeely, D.; Oesterreicher, H.
CORPORATE SOURCE: Oregon Grad. Cent., Beaverton, OR, USA
SOURCE: Journal of the Less-Common Metals (1976), 44, 183-93
CODEN: JCOMAH; ISSN: 0022-5088
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Al substitution for Fe in Sm2Fe17 results in stabilization of the Th2Zn17 structure. Compds. are homogeneous from x = 0.20 to x = 0.50 in Sm0.105Fe0.895-xAlx when annealed at 800.degree. C. In this structure, Fe and Al are statistically distributed on 6(c), 9(d), 18(f) and 18(h) sites. Materials with x = 0-0.15 are composed of the Th2Zn17 type and Fe. The **magnetic** hardness at cryogenic temps. increases rapidly around a compn. with x = 0.30. A value of coercive force, Hc = 15 kOe, is obtained both on bulk and powder material with x = 0.50 at 4.2.degree.K. This low-temp. **magnetic** hardness appears to be **connected** with the presence of highly energetic domain walls. The mechanism of **demagnetization** involves domain nucleation, in contrast with Sm0.167Co0.833-xAlx where **demagnetization** is predominantly governed by domain wall pinning.

L23 ANSWER 39 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1974:139167 CAPLUS
DOCUMENT NUMBER: 80:139167
TITLE: NMR study of the **temperature** dependence of the lithium-7 quadrupole coupling constant above and below the Curie **temperature** in ferroelectric lithium tantalate
AUTHOR(S): Slotfeldt-Ellingsen, Dag
CORPORATE SOURCE: Cent. Inst. Ind., Oslo, Norway
SOURCE: Magn. Resonance Relat. Phenomena, Proc. Congr. AMPERE, 17th (1973), Meeting Date 1972, 350-2. Editor(s): Hovi, V. North-Holland: Amsterdam, Neth.
CODEN: 28FGAT
DOCUMENT TYPE: Conference
LANGUAGE: English
AB The quadrupole coupling consts. .nu.Q, detd. by NMR measurements on powd. samples at 9 MHz, of 7Li in LiTaO3 as a function of the temp. (100-1160.degree.K) shows an abrupt change in the slope at the Curie temp. Tc (953.degree.K), suggesting that the temp. variations of .nu.Q are **connected** to the phase transition. A calcn. of the elec. field gradient at 294.degree.K and Tc on the basis of a point charge model shows that of the effective O charge is neg., .nu.Q is larger above than below

Tc, as obsd. exptl. The gradual change of .nu.Q as the temp. is raised to Tc may be explained by the gradual change in ionic coordinates in this temp. region. Above Tc, these coordinates are fixed, and the decrease in .nu.Q in that region may be due to thermal averaging effects caused by lattice vibrations. An expression is given for calcg. .nu.Q at any temp.

L23 ANSWER 40 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1973:469522 CAPLUS
DOCUMENT NUMBER: 79:69522
TITLE: Variation of the **magnetic** properties of samarium(cobalt, copper)5 alloys with **temperature**
AUTHOR(S): Kamino, Kimiyuki; Kimura, Yasuo; Suzuki, Tsutomu; Itayama, Yasuhiko
CORPORATE SOURCE: Tech. Res. Lab., Mitsubishi Steel Manuf. Co., Tokyo, Japan
SOURCE: Transactions of the Japan Institute of Metals (1973), 14(2), 135-9
CODEN: TJIMAA; ISSN: 0021-4434
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Modified permanent **magnets** of rare earth Co compds. have a complex decompn. mechanism. Studies were made of the variation of **magnetic** properties (remanence, coercive force, energy product) with temp. for Sm(Co, Cu)5 alloys contg. 0-75% Cu. The optimum area for **magnetic** values shifted toward the Sm-poor side from the tie line **connecting** SmCo5 with SmCu5. DTA revealed that the endothermic reaction temps. were .apprx.920.degree. and scarcely varied in alloys contg. 16-66 at. % Cu. Phase transformation may occur at this temp. regardless of different Cu contents. In Sm(Co, Cu)5 alloys a single **Curie point** (Tc) was obsd. on rapid heating from the as-cast condition, compared with 2 points on slow cooling after heating at 1000.degree. for 30 min. One of the Curie points belongs to a SmCo5 type structure and the other to a compd. isostructural with Sm2Co17. From DTA and measurements of Tc and **magnetic** values, a hypothetical Sm-Co-Cu ternary phase diagram is proposed. Alloys contg. 24-40 at. % Cu may decomp. spinodally.

L23 ANSWER 41 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1971:92797 CAPLUS
DOCUMENT NUMBER: 74:92797
TITLE: Curie **temperature** and superexchange interaction in calcium-vanadium iron garnets
AUTHOR(S): Llabres, J. B.
CORPORATE SOURCE: Lab. Cent. Rech., Thomson-C.S.F., Orsay, Fr.
SOURCE: Physica Status Solidi A: Applied Research (1971), 4(1), K61-K64
CODEN: PSSABA; ISSN: 0031-8965
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The exptl. Curie temp. of Y3-2x-Ca2xFe5-xVxO12 garnets, with x e1.5, is well described by the G. A. Smolenskii and V. P. Polyakov (1965) theory, which assumes that the high Curie points of these garnets a re caused by a replacement of **magnetic linkages** due to a superexchange int eraction of the type Fea3+-O2-Vd5+-O2-Fea3+ through the partly fill ed 3d states in the substituted V atom, and the further assumption that t he V5+ **link** 2 octahedral Fe ions per V5+.

L23 ANSWER 42 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1968:414056 CAPLUS
DOCUMENT NUMBER: 69:14056
TITLE: Variation of the Curie **temperature** with hydrostatic pressure and anomalous compressibility in gadolinium

AUTHOR(S): Iwata, Nobuo; Okamoto, Tetsuhiko; Tatsumoto, Eiji
CORPORATE SOURCE: Hiroshima Univ., Hiroshima, Japan
SOURCE: Journal of the Physical Society of Japan (1968), 24(4), 948
CODEN: JUPSAU; ISSN: 0031-9015
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The Curie temp. (Tc) of Gd has been detd. under hydrostatic pressures (1 bar to 6 kilobars) to have the effect of pressure on Tc assocd. with the exchange interaction. Measurements of the linear compressibility (K1) have been made from -100.degree. to 60.degree. to investigate the anomaly expected in thermodynamics in **connection** with the **magnetic** transition. Tc was detd. by the cusp of the **magnetoresistance** vs. temp. curve. Tc decreases linearly with pressure; .DELTA.Tc/.DELTA.p is - 1.4 .times. 10-3 degree/bar. The anomaly expected is clearly observed at Tc and estd. to be .DELTA.K1 = 0.3 .times. 10-7/bar. The observed K1 was scarcely different in the presence and in the absence of a strong **magnetic** field, so that the domain configuration in no field was assumed to be unchanged for the application pressures. The compressibility appears to be smaller in the **ferromagnetic** than in the fictional **paramagnetic** state. This may be attributable to the appearance of **ferromagnetism**.

L23 ANSWER 43 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1968:7686 CAPLUS
DOCUMENT NUMBER: 68:7686
TITLE: Resonance absorption of 23.8-kev. .gamma.-quanta by tin-119 impurity nuclei in ferrite spinels in a **temperature** range above the **Curie point**
AUTHOR(S): Gruzin, P. L.; Shlokov, G. N.; Alekseev, L. A.
CORPORATE SOURCE: Mosk. Inzh.-Fiz. Inst., Moscow, USSR
SOURCE: Doklady Akademii Nauk SSSR (1967), 176(2), 362-4
CODEN: DANKAS; ISSN: 0002-3264
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The probability of the absorption of 23.8-kev. .gamma.-quanta by 119Sn impurity nuclei in Mg-Mn, Mn-Zn, and Mg-Mn-Zn ferrites with spinel structure was detd. Sn (2-5%), enriched 86.9% with 119Sn, was introduced in the form of SnO2 into the oxide mixts. during the prepn. of the ferrites. The probability of the Moessbauer effect, f', was detd. above the Curie temps., TC, of the ferrites. The f' on the 119Sn nuclei has considerable values up to 900.degree.K. For some ferrites it is higher than for SnO2 at the same temp., and its temp. dependence is steeper. The results agree well with the theory for heavy impurity atoms in a light matrix. f' increases if TC increases and is equal for ferrites with equal TC. This is due to the **connection** between TC and the interaction of the 119Sn nuclei with the ferrite matrix. In the absence of **magnetic** ordering, the temp. dependence of the **magnetic** characteristic of the ferrites is detd. by the dynamic properties of their crystal lattice. Anomalies were found for the temp. dependence of f' at TC.

L23 ANSWER 44 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1967:477454 CAPLUS
DOCUMENT NUMBER: 67:77454
TITLE: **Temperature** dependence of the Thomson-Bakhmet'ev **thermomagnetic** effect in the nickel-silicon alloy system in a longitudinal **magnetic** field
AUTHOR(S): Annaev, R. G.; Alizade, Z. I.; Karshibaev, A.
CORPORATE SOURCE: A. M. Gor'kogo Turkmensk. Gos. Univ., Ashabad, USSR
SOURCE: Izvestiya Akademii Nauk Turkmenskoi SSR, Seriya Fiziko-Tekhnicheskikh, Khimicheskikh i Geologicheskikh

Nauk (1967), (2), 9-17
CODEN: ITUFAW; ISSN: 0002-3507
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The following equation has been derived for the value of **thermomagnetic** effect (ET1T2) at satn. fields in a 2-component alloy A-B, when one **joint** of the the thermocouple is at temp. T1 and another at T2, whereby T1>T2: ET1T2 = E0 [1 - (T1/.theta.0)]2 - [1 - (T2/.theta.0)]2/[1 - (B/B2)], where E0 is the value of **thermomagnetic** effect at satn. fields in a 2-component alloy A-B when one **joint** is at the temp. 0.degree.K. and the other one is at the **Curie point**, B is the given concn. in at. % of the alloying **nonmagnetic** element, B2 is the crit. concn. produced by extrapolating the curve of compn. B up to the point at which the above given equation is still valid, and .theta.0 is the **Curie point** of the pure **ferromagnetic** element. The purpose of this study was to det. the temp. dependence of the longitudinal **thermomagnetic** effect of Thomson-Bakhmet'ev and to verify the above-indicated equation. Five Ni-Si alloys (Si 0.5, 0.75, 1.0, 1.5, and 2.0 at. %) were prepd., forged, homogenized by heating 10 hrs. at 1000.degree., then cold drawn to 0.6-1.0 mm. in diam. and 150-200 mm. long, annealed again in vacuo for 6 hrs. at 900.degree., and slowly cooled with the furnace in vacuo at 90.degree./hr. Subsequently the longitudinal **thermomagnetic** effect was detd. by using the method described previously (Tr. Pervoi Mezhvuz. Konf. Sovrem. Tekhn. Dielek. Polsysrovodnikov, Leningrad 1957). Also the **Curie point** B2 and E0 for the pure Ni were detd. (**Curie point** = 353.degree., B2 = 4.87 at. % Si, and E0 = 66 .times. 10-6 v.). The value of the satn. **thermomagnetic** effect decreased linearly with increasing Si concn. in the alloy, and the same applied to Curie points and satn. **magnetization**. The **thermomagnetic** effect changed sign at temps. close to the **Curie point**. The curve of the temp. dependence of the **thermomagnetic** effect can serve for the detn. of the **Curie point**. 22 references.

L23 ANSWER 45 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1966:461823 CAPLUS
DOCUMENT NUMBER: 65:61823
ORIGINAL REFERENCE NO.: 65:11516g-h,11517a-b
TITLE: **Magnetic** interactions in ternary ruthenium oxides
AUTHOR(S): Callaghan, Alan; Moeller, Carl W.; Ward, Roland
CORPORATE SOURCE: Univ. of Connecticut, Storrs
SOURCE: Inorg. Chem. (1966), 5(9), 1572-6
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The **magnetic** susceptibilities of 6 ternary Ru oxides in which the Ru atoms are in octahedral coordination with O have been measured from 77 to 1000.degree.K. The perovskite-type SrRuO3 (I) is **ferromagnetic** (Curie temp. Tc = 160 .+-. 10.degree.K., Debye temp. .theta. = 161.degree.K., .mu.sat = 0.85 Bohr **magnetons** (B.M.), high-temp. .mu.eff = 2.6 B.M.). The isotypic CaRuO3 (II) on the other hand, may be **antiferromagnetic**. The Weiss temp. is neg. but the Neel point, if one exists, lies below the temp. range covered (.mu.eff = 3.0 B.M., .theta. = -119.degree.K.). Sr2RuO4 (III) (K2NiF4 structure) shows an almost const. **paramagnetism** over a temp. range of 700.degree.. BaRuO3 (IV), (Ba5/6Sr1/6)RuO3 (V), and Ba(Ru2/3Mg1/3)O3 (VI), all contain RuO6 octahedra sharing faces. The first has strings of 3 octahedra sharing 2 faces **connected** by corner sharing of the outermost octahedra to adjacent strings; the 2nd has 2 face-sharing octahedra **connected** to other pairs by corner sharing, while the 3rd has 2 face-sharing octahedra **connected** by corner sharing through a MgO6 octehedron. The latter contains Ru(V).

These 3 compds. all exhibit a low **paramagnetism**. The .chi.m - T plots for IV and VI show broad max. at 430 and 390.degree.K., resp., whereas for V there is no max. and only a slight **temperature** dependence. All of the substances are good conductors except VI. The **magnetic** behavior of IV, V, and VI is interpreted as evidence for metal-metal bonds between the Ru atoms in face-shared octahedra, and the data for VI agree well with the Kambe model for a spin-coupled binuclear system. SrRuO3 appears to offer the first example of **ferromagnetism** attributable solely to a period 5 transition metal. 15 references.

L23 ANSWER 46 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1964:452068 CAPLUS
DOCUMENT NUMBER: 61:52068
ORIGINAL REFERENCE NO.: 61:9023b-c
TITLE: **Temperature** dependence of the Hall effect in Ni-Mo alloys
AUTHOR(S): Volkova, D. I.; Kozlova, T. M.
SOURCE: Fizika Metallov i Metallovedenie (1964), 17(6), 839-44
CODEN: FMMTAK; ISSN: 0015-3230
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The Hall effect, elec. resistivity (.rho.), and spontaneous **magnetization** (Is) in Ni-Mo were investigated from room temp. to the **Curie point**, and it was found that the Hall const. far from the **Curie point** is **connected** with .rho. similar to the relation Rs = a.rho. + b.rho.2. The proportionality between Rs and spontaneous **magnetization** was detd. and it was found that the scattering as the result of **magnetic** heterogeneity produces a Hall effect different from that produced by scattering from a contaminated background.

L23 ANSWER 47 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1964:422285 CAPLUS
DOCUMENT NUMBER: 61:22285
ORIGINAL REFERENCE NO.: 61:3793e-g
TITLE: The **temperature** dependence of the **magnetic** Barkhausen effect
AUTHOR(S): Stierstadt, I. K.; Pfrenger, E.
CORPORATE SOURCE: Univ. Munich, Germany
SOURCE: Zeitschrift fuer Physik (1964), 179(2), 182-98
CODEN: ZEPYAA; ISSN: 0044-3328
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB An app. is described for measuring the size distribution of Barkhausen discontinuities with a **magnetic** moment > 10-6 e.m.u. in a temp. range from liquid air up to the **Curie point**. The counting method in **connection** with a multichannel analyzer was used. The results with Ni samples of various purities and heat treatments are: (1) The size distribution of 2 samples having the same hysteresis loop can show a completely different behavior as a function of the **magnetic** field. (2) The no. of large discontinuities decreases more rapidly with rising temp. than that of the smaller ones. This leads to the conclusion that the Barkhausen component of total **magnetization** vanishes much more rapidly with increasing temp. than that of differential susceptibility. (3) The crit. field strength, characterized by a max. in the no. of discontinuities per unit field, shows the same temp. dependence as the coercive field. This crit. field is only slightly dependent on the size of the jumps. (4) The av. **magnetic** moment of the discontinuities in the measured size range appears to vary less with temp. than the spontaneous **magnetization** . (5) Above 270.degree. spontaneous jumps are produced, even in hard **magnetic** samples, by the most minute vibrations, such as speaking loudly or coughing. (6) The Barkhausen part of the total

magnetization varies with temp. as the coercive force and therefore seems to be a structure-dependent quantity.

L23 ANSWER 48 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1967:416127 CAPLUS
DOCUMENT NUMBER: 67:16127
TITLE: **Magnetic** properties of natural **magnetites** as a function of **temperature**
AUTHOR(S): Pascu, Mihail B.
SOURCE: Analele Universitatii Bucuresti, Seria Stiintele Naturii (1963), 12(39), 147-51
CODEN: ABSNB3; ISSN: 0524-8302
DOCUMENT TYPE: Journal
LANGUAGE: Romanian

AB The temp. dependence of the **magnetic** properties was studied exptl. in a large no. of natural **magnetites**. The different Curie points (C.P.) of the natural **magnetites**, ranging from 525 to 610.degree., were attributed to their different chem. compns. regarding the isomorphous mixt. FeO + Fe2O3 + TiO2, as well as the normal **magnetite**. The samples were sepd. according to the mode of formation of the deposit-pyrometasomatic (I), hydrothermal (II), and metamorphosic (III)-to study the correlation between the main constituent (Fe) and the other materials included following the formation processes. Powd. or cylindrical specimens were heated 1 hr. from 20 to 600.degree., holding 15 min. at 600.degree. to det. elimination of constitution H2O and of eventually contained gases (0.5-1% by wt.); the oxidn. of the **magnetite** on its external and internal surfaces (of cracks and pores), with formation of Fe2O3 in the course of heating, had no influence on the **magnetic** properties of the **magnetite**. The eventual existence of different **magnetic** susceptibilities before and after heating was followed, detg. also the C.P. of the samples (the **magnetic** field was directed along the specimen axis). A pronounced diminution of the **magnetic** susceptibility was observed in I specimens around 300.degree. which was very rapid when nearing 500.degree., reaching 0 at the C.P. The susceptibility was slightly higher in I specimens after heating, and this was attributed to the presence of sulfides (pyrite and pyrrhotite) contg. equal. traces of Co and Ni, and to some hematite, which is transformed into Fe ore and Fe3O4, resp. The C.P. of I specimens sepd. them into 2 series, being around 550 and 570.degree., resp. In II specimens (contg. siderite with Fe 30, Mn 1, Sn 15-32%, and limonite) the susceptibility increased slightly after heating and cooling, this being attributed to the sulfide content, the pyrrhotites and pyrites produced under hydrothermal conditions being strongly **ferromagnetic**; chem. and microscopic analysis confirmed this. The C.P. values were grouped around 500-10.degree.. In III specimens, 2 categories were observed: IIIa with a high Fe3O4 content (the Fe content being 60-5%) and IIIb composed mainly of siderite. IIIa showed high **magnetic** susceptibilities and its C.P. values were around 575-85.degree., that is very close to that of pure **magnetite**. IIIb showed lower susceptibility values [although some **magnetite** and pyrite were present], and C.P. values around 520-30.degree.. The specimens studied showed different curves of susceptibility vs. temp.; in some the susceptibility presented const. values with respect to the temp. increase, being followed finally by a max. and a decrease, while in others a sharp max. was observed in the shape of a peak. In some specimens many max. of different order were observed, while in others the max. of susceptibility was displaced with respect to the temp., probably in some **connection** with the sample origin. The C.P. values of all specimens were reproduced on different days.

L23 ANSWER 49 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1963:451635 CAPLUS

DOCUMENT NUMBER: 59:51635
ORIGINAL REFERENCE NO.: 59:9353c-f
TITLE: Ultrasonic attenuation in MnF2 near the Neel **temperature**
AUTHOR(S): Neighbours, J. R.; Oliver, R. W.; Stillwell, C. H.
CORPORATE SOURCE: Space Technol. Labs., Los Angeles, CA
SOURCE: Physical Review Letters (1963), 11(3), 125-7
CODEN: PRLTAO; ISSN: 0031-9007
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Preliminary results are reported of ultrasonic attenuation expts. on single-crystal MnF2 which showed a frequency-dependent attenuation peak only for longitudinal waves very close to the Neel temp., a relatively slight dependence of attenuation on **magnetic** field strength, and no observable change in elastic const. of the Neel temp. The measurements concerned the attenuation and the velocity of ultrasonic waves traveling parallel to [110] in the temp. range of 58 to 90.degree.K. Longitudinal and transverse waves were investigated at frequencies up to 65 Mc. The path length at room temp. was 13.86 mm. Short radio-frequency pulses were generated by a pulsed oscillator **connected** to the crystal, receiver, and time-mark generator in conventional manner. Abs. values of wave velocity were detd. from the room temp. length with the necessary corrections. The values of 70 K., in units of 1011 dynes per cm.2 of the consts. (1/2 C11 + 1/4 C12 + C66),C44, and (1/2 C11 - 1/2 C12) were 16.92 3.257, and 1.019, resp. Changes in wave velocity were detd. by the observed change in transit time of multiply reflected echo. Attenuations were detd. by comparing successive echo intensities displays on an oscilloscope. Temp. was controlled by a flow of liquid O2, and the crystal was just immersed in this cryogenic fluid. The attenuation peak of longitudinal waves of various frequencies, 8.3, 16.0, 32.0, 43.0, and 65.5 Mc., increased with frequency and always occurred at 67.35 .+-. 0.02.degree.K., the Neel temp. being 67.336 K. (Heller, CA 57, 9376h). A special graph shows the attenuation vs. temp. for 25-Mc. longitudinal waves traveling parallel to [110] in MnF2 for zero-extended field and for 3600-gauss applied **magnetic** field. It appears that the **magnetic** field does not affect the amplitude or position of the attenuation peak, the max. value of which was 2.6 decibel/cm. For shear waves, the attenuation increased with frequency with no peak near the Ned temp. The transition in MnF2 is believed to be an order-disorder phase-change between the 2 orientations of spins.

L23 ANSWER 50 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1963:43907 CAPLUS
DOCUMENT NUMBER: 58:43907
ORIGINAL REFERENCE NO.: 58:7486g-h
TITLE: Effect of **temperature** on **magnetic** saturation induction in alloys of the Fe-Co system
AUTHOR(S): Pshechenkova, G. V.; Skokov, A. D.
SOURCE: Fizika Metallov i Metallovedenie (1962), 14, 797-9
CODEN: FMMTAK; ISSN: 0015-3230
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Diagrams of isothermal curves of **magnetic** satn. reveal that Co alloys have much better properties than Fe at high temp. For example, at 800.degree., when Fe is **nonferromagnetic**, the alloy contg. 25% Co has a satn. induction >17,000 and alloys contg. 30-60% Co .apprx.19,000 gauss. At 700.degree. satn. induction of alloys contg. 30-50% Co is >20,000, while in Fe at the same temp. it is only 12,500 gauss. But even at temps. considerably lower than the **Curie point** of Fe the alloys of Fe-Co base have advantages over Fe in their temp. stability: the temp. coeff. of satn. induction of Fe at 600.degree. is 13 .times. 10-3/degree, while in alloys contg. 30-50% Co it is only 0.4 .times. 10-3. At 700.degree. it is 4.4 .times. 10-3 and 0.7 .times. 10-3, resp.

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L23 ANSWER 51 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1961:63242 CAPLUS
DOCUMENT NUMBER: 55:63242
ORIGINAL REFERENCE NO.: 55:12046e-h
TITLE: Peculiarities of the ultrahigh-frequency dielectric permeability of **antiferromagnetic** semiconductors at the Neel **temperature**
AUTHOR(S): Samokhvalov, A. A.; Fakidov, I. G.; Kopytov, E. I.
SOURCE: Fizika Metallov i Metallovedenie (1960), 10, 538-42
CODEN: FMMTAK; ISSN: 0015-3230
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB The dielec. permeability of an **antiferromagnetic** semiconductor of Cr2O3 was measured at 9500 Mc. Specimens were prepd. from powd. Cr2O3 by compression at 5000 kg./sq. cm. and sintering at 800-900.degree.. To insure the stability of measurements, specimens were dried in vacuo at 200.degree. to remove traces of moisture. Measurements were carried out near the Neel temp. On transition to the **paramagnetic** form, the dielec. permeability increases sharply by 3-4%. Considering that the activation energy of electrons varies as the square of the dielec. permeability, it is apparent that the measured anomaly of ultrahigh-frequency dielec. permeability can introduce a considerable added effect in the general change of activation energy, **connected** with the change of the energy spectrum on the deterioration of **antiferromagnetic** spin at the Neel point. A similar anomaly of the dielec. permeability was also observed in MnS, FeO, and some other **ferromagnetics**. A description of a wave guide assembly for the measurement of dielec. permeability at 9500 Mc. is given.

L23 ANSWER 52 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1960:84297 CAPLUS
DOCUMENT NUMBER: 54:84297
ORIGINAL REFERENCE NO.: 54:16062h-i,16063a-b
TITLE: Dependence of **magnetic** susceptibility of barium ferrite on **temperature**
AUTHOR(S): Borovik, E. S.; Mamalui, Yu. A.
CORPORATE SOURCE: A. M. Gor'kii State Univ., Kharkov
SOURCE: Fizika Metallov i Metallovedenie (1960), 9(No. 1), 36-40
CODEN: FMMTAK; ISSN: 0015-3230
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB The **magnetic** susceptibility of BaO.6Fe2O3 in the temp. interval from room to 350.degree. was investigated. The specimens of ferrite were prepd. by thoroughly mixing stoichiometric quantities of wetted BaCO3 and Fe2O3 powders, drying, and calcining the mixt. at 1000.degree. for 5 hrs. The specimens compressed from the calcined mixt. were further baked 1 hr. at 1200.degree.. The hysteresis loops of the specimens on **magnetization** in the field up to 6500 oe. had characteristic values, the residual induction B.tau. = 2100 gausses and coercive force Hc = 3100 oe. Measurements above the **Curie point** showed that the formula for **paramagnetic** susceptibility of BaO.6Fe2O3 detd. according to N.acte.eel theory is valid almost to the **paramagnetic Curie point** Results of the measurements below the **Curie point** showed, that common to **ferromagnetics**, arise in the initial **magnetic** susceptibility approaching the **Curie point** (Hopkinson effect) was absent in BaO.6Fe2O3, at relative **magnetization** of less than 1% of the satn. **magnetization** I8. In **connection** with this it was noted that the dependence of Hc on the

temp. also had somewhat anomalous character. At 250.degree. it has a max. and after this its value decreases very slowly.

L23 ANSWER 53 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1960:47886 CAPLUS
DOCUMENT NUMBER: 54:47886
ORIGINAL REFERENCE NO.: 54:9404h-i,9405a
TITLE: Increase of coercive force of mixed ferrites-lithium chromites in the region of compensation **temperature**
AUTHOR(S): Bol'shova, K. M.; Elkina, T. A.
CORPORATE SOURCE: M. V. Lomonosov State Univ., Moscow
SOURCE: Fizika Metallov i Metallovedenie (1959), 8, 461-3
CODEN: FMMTAK; ISSN: 0015-3230
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB **Ferromagnetic** spinels, the compn. of which is expressed by the formula Li2O.(5 - 2a)Fe2O3.2aCr2O3, in the region of a = 1 or 2, possesses a unique property in that their spontaneous **magnetization** becomes equal to 0 not only at the Curie temp., but at a considerably lower temp., the so-called point of compensation. Detailed exptl. investigation of the dependence of these materials on the temp. in regions of the **Curie point** and the compensation point, indicates that in ferrites of the above type, the observed increase of the coercive force Hc in the region of the compensation temp. Tk is **connected** with a sharp decrease in **magnetization**. Curves are presented expressing the dependence of Hc, spontaneous **magnetization** .sigma.s, and residual **magnetization** .sigma.r at temps. from 0 to 100.degree.. There are 2 causes of the increase in Hc: the basic cause, apparently, is the growth of Hc in the region of the compensation temp., which is **connected** with some heterogeneity of chem. compn. of the material. This is indicated by the existence of "incomplete compensation," i.e., there still exists small spontaneous **magnetization** at the compensation temp. The 2nd cause of Hc increase is **connected** with the powder character of the ferrites.

L23 ANSWER 54 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1958:59344 CAPLUS
DOCUMENT NUMBER: 52:59344
ORIGINAL REFERENCE NO.: 52:10670c-e
TITLE: **Galvanomagnetic** effect in the Curie-**temperature** range
AUTHOR(S): Paces, Jaroslav
SOURCE: Czechoslovak Journal of Physics (1957), 7(No. 6), 729-43
CODEN: CZYPAO; ISSN: 0011-4626
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The influence of the **magnetic** field on the elec. resistance of Ni and of some Ni alloys was measured near their respective Curie-temps. At these temps., the effect is considerably less than at room temp. Below 347.5.degree., the resistance of Ni in a weak **magnetic** field increases, but in a strong field it decreases with the field intensity (para process). At elevated temps., the resistance decreases with the field intensity at all field values. The complex nature of the effect is due to the fact that it depends on the **magnetization** of the samples. Under the assumption that the **magnetization** is thermodynamically a phase transformation of the 2nd order, equations were found **connecting** the **magnetization** with the resistance changes. The equations agree well enough with the exptl. data on Ni, but not on its alloys, e.g. with 4.9% Si. The discrepancy can be attributed to the non-uniformity of the alloys, and, consequently, of their Curie temps.

L23 ANSWER 55 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1957:34542 CAPLUS
DOCUMENT NUMBER: 51:34542
ORIGINAL REFERENCE NO.: 51:6498c-f
TITLE: Bodies having low-**temperature** coefficients of elasticity
INVENTOR(S): Fine, Morris E.
PATENT ASSIGNEE(S): Bell Telephone Laboratories, Inc.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2775536		19561225	US	

AB The alloys concerned are formed of Fe, Ni, and one or more of the metals Mo, Cr, and W. The alloys are proportioned so that their compns. fall within a certain area on a triaxial diagram the 3 coordinates of which are wt. % Ni, wt. % Fe, and wt. % of at least 1 metal selected from the group consisting of Mo, Cr, and W. Preferably the alloy compns. fall within a pentagon formed by straight lines **joining** successively the points 28-8-64, 28-13-59, 36-20-44, 36-13-51, and Ni 32-(Mo, Cr, W) 9, Fe, 59%, resp. The alloys are useful for spiral hair springs for watches, springs for measuring or applying force or mech. vibratory elements, or for a body which shows as little change in modulus of elasticity as possible over the entire temp. range to which the app. may be subjected. A suitable alloy was prepd. contg. Mo 10, Ni 30, Mn 0.75%, and balance Fe. When cold-rolled to an area reduction of 56% and annealed at 400.degree., the alloy had a **Curie point** at about 85.degree. and a modulus of elasticity of less than 0.1% from its value at 25.degree. over the range 0.degree. to 50.degree.. At 25.degree. the satn. **magnetization** was 300 gausses. In the range 0.degree. to 50.degree. the satn. **magnetization** varied from 600 to 200 gausses. Other alloys having comparable properties after similar treatment are an alloy of W 11, Ni 35, and 0.75% Mn, an alloy of Cr 12, Ni 34, and Mn 0.75%, and an alloy of Mo 8, Cr 4, Ni 33, and Mn 0.75%.

L23 ANSWER 56 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1950:21824 CAPLUS
DOCUMENT NUMBER: 44:21824
ORIGINAL REFERENCE NO.: 44:4303e-g
TITLE: Relation between the thermal expansion, the Curie **temperature**, and the lattice spacing of homogeneous ternary nickel-iron alloys
AUTHOR(S): Went, J. J.
CORPORATE SOURCE: Philips Research Lab., Eindhoven, Neth.
SOURCE: Physica (The Hague) (1949), 15, 703-10
CODEN: PYSIA7; ISSN: 0370-2707
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The results of measurements on the Curie temp., the thermal expansion anomaly below the Curie temp., and the lattice spacing are given for a series of 15 ternary alloys, each contg. approx. 51 at. % Fe, 46 at. % Ni, with small amts. of Co, Cu, Zn, Sn, Cr, Mn, W, V, Mo, Ti, and Ta. These are analyzed in terms of the energy difference between the **magnetic** and the **nonmagnetic** state. A close relation exists between the change in Curie temp. and the change in the expansion anomaly for the different alloys. This change in Curie temp. depends on the position of the 3rd element in the periodic table relative to Ni. There is no **connection** between the change in Curie temp. and the lattice spacing.

L23 ANSWER 57 OF 57 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1917:15779 CAPLUS
DOCUMENT NUMBER: 11:15779
ORIGINAL REFERENCE NO.: 11:3166i,3167a-b
TITLE: Initial **magnetization** as a function of the **temperature**
AUTHOR(S): 'Weiss, P.; de Freudenreich, J.
SOURCE: Archives des Sciences Physiques et Naturelles (1916), 42, 449-70
CODEN: ASPNA4; ISSN: 0365-7116
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB The present work deals with Ni and is the conclusion of a series of three articles on initial **magnetization** (cf. C. A. 9, 1427). In agreement with the work of Radovanovic (C. A. 6, 961), W. and F. verify the relationship b = Aa4 between the consts. of the equation k = a + bH **connecting** the initial susceptibility with the field strength. The const. A, however, is roughly 1/2 the value found by R. for the same sample. This difference is attributed to the heat treatment which the sample had received, as it was used by Perrier and Onnes (C. A. 7, 1325) in their low temp. work. Although R.'s results indicate an infinite value for k in the neighborhood of the **Curie point** (360.degree.) only a finite value is found. Between 220.degree. and 360.degree. the k-temp. curves for a const. field are irreversible. The latter part of the paper is theoretical and attempts to explain the irreversible thermal curves by assuming that the elementary crystals are of the pyrrhotite type, that the coercive field is not the same for each crystal and that the action of the crystal environment on a crystal is equivalent to that of a **magnetic** field.

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FILE 'MEDLINE, BIOSIS, BIOTECHDS, CAPLUS, EMBASE' ENTERED AT 09:25:23 ON 25 SEP 2003

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L1       1655987 S ?MAGNET?
L2       5267993 S BIND? OR CONNECT? OR JOIN? OR LINK?
L3        142821 S L1 AND L2
L4         43992 S CURIE
L5          1117 S L3 AND L4
L6         52322 S TEMPERATURE (S) ENVIRONMENT?
L7             3 S L5 AND L6
L8         19897 S CURIE (S)  POINT
L9           391 S L3 AND L8
L10        72287 S TEMPERATURE (S) (CORRESPOND? OR RESPONSE)
L11            0 S L9 AND L10
L12       122140 S TEMPERATURE (S) (CHANG? OR VARIAN?)
L13            1 S L9 AND L12
L14        19644 S CURIE POINT
L15          379 S L3 AND  L14
L16      4076235 S SIMULAT? OR DEMONSTRAT?
L17            8 S L15 AND L16
L18            8 DUP REM L17 (0 DUPLICATES REMOVED)
L19        63389 S FLOAT?
L20            0 S L15 AND L19
L21      1266014 S TEMPERATURE
L22           57 S L15 AND L21
L23           57 DUP REM L22 (0 DUPLICATES REMOVED)
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L25 53 DUP REM L24 (2 DUPLICATES REMOVED)

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L25 ANSWER 1 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Free spin-fluctuating lattice polarons as an alternative to small polarons

L25 ANSWER 2 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Dynamical mean-field theory of a simplified double-exchange **model**

L25 ANSWER 3 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Poly(phenylenevinylene)-Attached Phenoxyl Radicals: **Ferromagnetic** Interaction through Planarized and .pi.-Conjugated Skeletons

L25 ANSWER 4 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Zero-point spin fluctuations and the **magnetovolume** effect in itinerant-electron **magnetism**

L25 ANSWER 5 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI **Magnetic** and transport properties of Zn-doped YBa2Cu3O7 in the normal state

L25 ANSWER 6 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Giant forced-volume and saturation **magnetostriction** of amorphous La(FexAl1-x)13 alloys composed of icosahedral clusters

L25 ANSWER 7 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Electronic structures and Curie temperatures of iron-based rare-earth permanent-**magnet** compounds

L25 ANSWER 8 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Structural and **magnetic** properties of deposited layers

L25 ANSWER 9 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Generalization of the Curie-Weiss **model** to the D-dimensional spin system

L25 ANSWER 10 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI **Magnetic** properties of ultrafine nickel particles

L25 ANSWER 11 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Spin-wave Stoner single-particle and correlated particle-hole pair contributions to thermal **demagnetization** in amorphous iron-zirconium (Fe90+xZr10-x) alloys

L25 ANSWER 12 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Density-of-states-driven transition from superconductivity to **ferromagnetism** in cerium ruthenium rhodium boride (Ce(Ru1-xRhx)3B2): scenario for an exchange-split Kondo resonance

L25 ANSWER 13 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI A simplified **model** to calculate Curie temperature of **ferrimagnetic** spinels

L25 ANSWER 14 OF 53 MEDLINE on STN DUPLICATE 1

TI A new method for the determination of ethanol in the blood and urine by pulse heating.

L25 ANSWER 15 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI **Magnetic** properties of the 3d sublattice in pseudoternary compounds yttrium iron transition metal borides (Y2Fe14-xMxB: with M = Co and Mn)

L25 ANSWER 16 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Actinide-3d-metal Laves-phase intermetallic compounds: **magnetism** and electronic properties

L25 ANSWER 17 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI **Magnetic** properties and anisotropy of iron-cobalt-selenium ((Fe1-xCox)7Se8)

L25 ANSWER 18 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Dynamics of spin fluctuations in the Heisenberg **paramagnet**

L25 ANSWER 19 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Electrical and **magnetic** properties of amorphous iron-zirconium films

L25 ANSWER 20 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Critical behavior of a random itinerant-electron spin **model**

L25 ANSWER 21 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI New explanation of the spin-wave-like excitations in nickel above Tc

L25 ANSWER 22 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI A spin fluctuation theory of degenerate narrow bands - finite-temperature **magnetism** of iron

L25 ANSWER 23 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI The density of states and Curie temperature of amorphous iron-boron alloys

L25 ANSWER 24 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Electric resistivity and specific heat of Sn1-xCrxTe crystals

L25 ANSWER 25 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Pressure-induced **antiferromagnetism** in **ferromagnetic** iron-rhodium (Fe51.5Rh48.5) alloy

L25 ANSWER 26 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Exact solutions of the Curie-Weiss, Oguchi, and other clustering Ising **models**

L25 ANSWER 27 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Pressure-induced **antiferromagnetism** in **ferromagnetic** iron-rhodium (Fe51.5Rh48.5 alloy

L25 ANSWER 28 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI An investigation of solid solutions of hydrogen in thulium at low temperature and of their behavior under electron irradiation

L25 ANSWER 29 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Dilution in amorphous or frustrated Ising systems

L25 ANSWER 30 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Sublimation rate of cobalt near its Curie temperature

L25 ANSWER 31 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI The s-f **model** in **magnetic** semiconductors

L25 ANSWER 32 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Phase transition of a Ising **model** on a new looped tree-like lattice

L25 ANSWER 33 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Density of states and **magnetic** properties of the rare earth compounds RFe2, RCo2 and RNi2

L25 ANSWER 34 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Effect of single-ion anisotropy of "easy axis" type on the phase diagram of a **magnetic** substance with random exchange **links** of different signs

L25 ANSWER 35 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI **Magnetic** and neutron-diffraction studies of the sulfospinels Cu0.2Fe0.8Cr2S4 and Fe1.2Cr1.8S4

L25 ANSWER 36 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Enhanced spin susceptibility in phosphorus-doped silicon

L25 ANSWER 37 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Modified Zener **model** for **ferromagnetism** in transition metals and alloys. **Model** calculations of Tc

L25 ANSWER 38 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI NMR study of the temperature dependence of the lithium-7 quadrupole coupling constant above and below the Curie temperature in ferroelectric lithium tantalate

L25 ANSWER 39 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI **Magnetic** properties of praseodymium-indium (Pr3In)

L25 ANSWER 40 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Critical properties of the nearest-neighbor, classical Heisenberg **model** for the fcc. lattice in finite field for temperatures greater than Tc

L25 ANSWER 41 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Anomalous absorption of flexural vibrations in Invar alloys

L25 ANSWER 42 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Theory of **magnetic** thin films

L25 ANSWER 43 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI s-d **Model** with nonspherical Fermi surface

L25 ANSWER 44 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI **Magnetic** interactions in ternary ruthenium oxides

L25 ANSWER 45 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI **Magnetic** behavior of substituted **ferrimagnetic** garnets

L25 ANSWER 46 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Moessbauer study on FeSn and Fe3Sn

L25 ANSWER 47 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Thermodynamic behavior of the Heisenberg **ferromagnet**

L25 ANSWER 48 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI **Magnetic** interactions between manganese atoms in metals

L25 ANSWER 49 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Thermodynamic behavior of the Heisenberg **ferromagnet**

L25 ANSWER 50 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Neutron diffraction study of **antiferromagnetic** FeTiO3 and its solid solutions with .alpha.-Fe2O3

L25 ANSWER 51 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI The multielectron theory of semiconductors. III. **Antiferromagnetic** semiconductors

L25 ANSWER 52 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Thermoelectronic emission in **ferromagnetic** metals

L25 ANSWER 53 OF 53 CAPLUS COPYRIGHT 2003 ACS on STN
TI Optical constants of **ferromagnetic** substances